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ABSTRACT

Three types of undergraduate practice teaching environments--student teaching, interning, and micro-team teaching--were evaluated on the basis of the changes they produced in practice teachers' self-concept and openmindedness. Four instruments were administered to 121 practice teachers specializing in elementary education and to their cooperating teachers (N=69) in the fall and spring of 1970-71 academic year. The instruments were the "Minnesota Teacher Attitude Inventory"; Wrightman's "Philosophy of Human Nature"; Harvey's "This I Believe"; and a questionnaire, developed for the study, which surveyed opinions about the nature of the practice teaching environment. A separate-sample, pretest-posttest design was used; data were analyzed with analysis of variance and Chi-square techniques. Findings indicate that the micro-team teachers and interns were more openminded as a result of their experience than were student teachers. There was no significant change in the self-concept of any of the practice teachers. Since the interns were selected on the basis of higher academic achievement and personal interviews, the findings suggest that micro-team teaching provides a superior environment. (Included are a 74-item bibliography, a description of micro-team teaching, and the four instruments.) (Author/LP)

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A COMPARATIVE EVALUATION OF THE EFFECTIVENESS OF STUDENT TEACHING, INTERNING AND MICRO-TEAM TEACHING IN UNDERGRADUATE TEACHER TRAINING

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Reported are the findings of an evaluation of three different types of undergraduate practice teaching environments--student teaching, interning and micro-team teaching. Criteria used in the evaluation were the measurement of change in the practice teacher's self concept and openmindedness. Three instruments, the Minnesota Teacher Attitude Inventory, Wrightsman's Philosophy of Human Nature and O. J. Harvey's This I Believe were administered to one hundred ninety co-operating teachers and practice teachers involved in one of the three types of practice teaching organizations. An experimental separate sample pre-test post-test design, and a statistical model utilizing a two way analysis of variance unequal cell frequencies, were used for the study. The instruments were administered initially in the fall semester of the 1970-1971 academic year and replicated in the spring.

The findings indicate that the micro-team teachers and the interns were more openminded as a result of their experience than were the student teachers. There was no significant change in the self concept of any of the practice teachers as a result of their field experience. Because the interns are selected on the basis of higher academic achievement and personal interviews, and since there were no real differences between them and the micro-team teachers, the findings suggest that the micro-team teaching organization provides a superior environment.

Final Report

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TABLE OF CONTENTS

PAGE

LIST OF TABLES vii

LIST OF APPENDICES viii

CHAPTER

1 INTRODUCTION 1

BACKGROUND OF THE PROBLEM 1
STATEMENT OF THE PROBLEM 6

2 REVIEW OF THE LITERATURE 8

PRACTICE TEACHER ATTITUDES 8
PRACTICE TEACHER--COOPERATING TEACHER RELATIONSHIPS . 11
PRACTICE TEACHER--SUPERVISING TEACHER RELATIONSHIPS . 13
SCHOOL ENVIRONMENT 14
SUMMARY 16

3 RESEARCH METHOD 17

SUBJECTS 17
INSTRUMENTS 18
    TIB 18
    PHN 19
    MTAI 21
    Practice Teaching Inventory 23
TESTING PROCEDURES 23
EXPERIMENTAL DESIGN 24

4 ANALYSIS OF DATA 25

STATISTICAL METHODS 25
    Analysis of Variance 25
    Chi-square 26
SEMESTER I 26
    Practice Teacher Data Analysis 26
    Questionnaire Data 29
    Cooperating Teacher Data Analysis 29
    Questionnaire Data 33
SEMESTER II 34
    Practice Teacher Data Analysis 34
    Questionnaire Data 37
    Cooperating Teacher Data Analysis 38
    Questionnaire Data 41
SUMMARY OF FINDINGS 42
    Practice Teachers 42
    Cooperating Teachers 44

CHAPTER PAGE

5 LIMITATIONS, CONCLUSIONS AND IMPLICATIONS 45

LIMITATIONS 45
CONCLUSIONS 47
IMPLICATIONS 49

BIBLIOGRAPHY 51

GLOSSARY 57

APPENDICES 61

LIST OF TABLES

TABLE PAGE

1 EXPECTED VALUES OF MEAN SQUARES 25

2 SEMESTER I--PRACTICE TEACHERS CELL FREQUENCIES 26

3 PRACTICE TEACHERS CELL MEANS 27

4 SUMMARY OF ANOVA--PRACTICE TEACHERS 28

5 CHI-SQUARE ANALYSIS OF QUESTIONNAIRE DATA PRACTICE TEACHERS 30

6 SEMESTER I--COOPERATING TEACHERS CELL FREQUENCIES . . . 30

7 COOPERATING TEACHERS CELL MEANS 31

8 SUMMARY OF ANOVA--COOPERATING TEACHERS 32

9 CHI-SQUARE ANALYSIS OF QUESTIONNAIRE DATA COOPERATING TEACHERS 33

10 SEMESTER II--PRACTICE TEACHERS CELL FREQUENCIES 34

11 PRACTICE TEACHERS CELL MEANS 35

12 SUMMARY OF ANOVA--PRACTICE TEACHERS 36

13 CHI-SQUARE ANALYSIS OF QUESTIONNAIRE DATA PRACTICE TEACHERS 38

14 SEMESTER II--COOPERATING TEACHERS CELL FREQUENCIES . . 39

15 COOPERATING TEACHERS CELL MEANS 39

16 SUMMARY OF ANOVA--COOPERATING TEACHERS 40

17 CHI-SQUARE ANALYSIS OF QUESTIONNAIRE DATE COOPERATING TEACHERS 41

LIST OF APPENDICES

APPENDIX PAGE

A A DESCRIPTION OF MICRO-TEAM TEACHING--A NEW APPROACH TO TRAINING TEACHERS FOR TEAM TEACHING 61

B CHARACTERISTICS OF THE ELEMENTARY PRACTICE TEACHING PROGRAMS AT WISCONSIN STATE UNIVERSITY--LA CROSSE . . . 73

C INSTRUMENTS 77

  C-1 "THIS I BELIEVE" TEST (TIB) 78

  C-2 PHILOSOPHIES OF HUMAN NATURE SCALE (PHN). . . 80

  C-3 MINNESOTA TEACHER ATTITUDE INVENTORY 84

  C-4 PRACTICE TEACHING INVENTORY 85

D COPY OF LETTER SENT TO SUBJECTS OF THE STUDY 93

E TESTING PROCEDURES 95

F CHI-SQUARE CONTINGENCY TABLES 97

G LETTER FROM O. J. HARVEY, MARCH 12, 1971 119

H LETTER FROM O. J. HARVEY, JUNE 16, 1971 121

Chapter 1

INTRODUCTION

BACKGROUND OF THE PROBLEM

With the exception of a few generalists writing about the issues related to teacher training, there seems to be a general concensus of opinion that practice teaching is one of the most significant and highly relevant experiences offered in any teacher training program. This point of view is strengthened by the overwhelming general endorsement given it by practice teachers who have completed this phase of their training (Bennie, 1964; Wrablewski, 1963; Hermanowicz, 1966). Although other research surveys have indicated that students expressed criticism about some of the supervisory aspects of practice teaching, such as in the amount of supervision and support given by the college supervisor or cooperating teacher (Carr, 1967; Fleming, 1968; Lawther, 1970), the premise, even with the accumulation of these findings, is still held by academicians, practitioners, and even critics that practice teaching in any of its variant forms is the most relevant experience in the teacher education program. Conant (1963) cites student teaching as the "one indisputable essential element in professional education." Why?

The justification most frequently accorded this position is that it is one of the few practical experiences provided teachers in training (Johnson, 1965). It is the time when the teacher trainee has the chance to make operational the concepts and generalizations developed in his methods, psychology, or other liberal arts courses; that is, it is the time when he can apply in the classroom setting what he knows about individual differences, learning theory, or lesson planning. It is the time when the neophyte can utilize in teaching his knowledge of science, social science, and the humanities--that is, he teaches children what he knows about the geography of the Midwest, the causes of pollution, or the writing of a creditable business letter, etc. In other words, to restate the importance of practice teaching in the language of a shibboleth of the twentieth century--it bridges theory with practice.

With more emphasis in teacher education being placed upon field teaching, it should be noted that this could result in a "bad trip". Some educationists indicate that practice teaching may result in the development of a form of teaching behavior that is not only stagnant but, even worse, highly detrimental to the countless number of children who might be trapped with that teacher. John Dewey (1904) stated almost seventy years ago:

> Now the teacher who is plunged prematurely into the pressing and practical problem of keeping order in the schoolroom has almost of necessity to make supreme the matter of external attention. The teacher has not yet had the training which affords psychological insight--which enables him to judge promptly (and therefore almost automatically) the kind and mode of subject matter which the pupil needs at a given moment to keep his attention moving forward effectively and healthfully. He does know, however, that he must maintain order; that he must keep the attention of the pupils fixed upon his own questions, suggestions, instructions, and remarks, and upon their "lessons". . . The student (teacher) adjusts his actual methods of teaching, not to the principles which he is acquiring, but to what he sees other teachers doing who are more experienced and successful in keeping order than he is; and to instructions and directions given him by others. In this way the controlling habits of the teacher finally get fixed with comparatively little reference to principles in the psychology, logic, and history of education.

Dewey feared that practice teaching could become nothing more than a period for trainees to try out a maximum number of managerial skills designed to keep order rather than promote learning. Albert Yee (1968) expressed essentially the same concern:

> Little attention has been given to the identification of factors that significantly determine the nature of outcomes in student teaching experiences. Not knowing for sure what really matters in student teaching, very little empirical research has been conducted to explain how it affects the candidate in his professional development. Until much greater knowledge is sought and found concerning what variables really matter and how they affect behavior, systematic improvements in student teaching programs will be unlikely.

Yee found from his descriptive study that the most significant variables were the human relationships existing among the student teacher, cooperating teacher, and supervising teacher. The findings of his study make a strong case for the need to find means of improving what is essentially the educational setting in practice teaching--the interpersonal relationships among the three principals involved: the student, the supervisor, and the cooperating teacher.

It is because of the researchers' position--that the environment in which practice teaching takes place is significant to a successful pre-service teaching experience--that this study was designed. To some extent, the practice teaching environment is the result of administrative decisions: the grouping of children in the classroom, the equipment and material available, the teaching load, the special services available, etc.; however, to a much larger extent, in the opinion of the principal investigators, the environment is the by-product of human interactions, which there has been little deliberate effort to control: the courtesies and discourtesies that practice teachers experience; the prevailing beliefs about what is important in the practice teaching program and what is mere surface and facade; and the extent to which the professional educators are open to the opinions, suggestions, and judgments offered by the practice teacher. It was with the purpose of studying empirically the environment for practice teaching that this project was designed.

Presently the setting for practice teaching has been identified with two major types of terminal undergraduate practice teaching field experiences, namely, student teaching and internship. The basic difference between these field experiences, in the opinion of the investigators, is that the student teacher assumes increasing responsibility for a classroom after an extended period of guided teaching, whereas, the intern assumes all teaching responsibilities from the beginning and is paid a small stipend for this service. Within these two major forms there have been variations of the basic structure which, for the most part, have dealt with the number of hours during the day the student teacher teaches (i.e., from a few hours a day to full days); and the number of days one teaches (i.e., from half semester to full semester coinciding with either the university's or the school system's calendar). These variations then can best be classified as differences within a basic format rather than as different types of teaching environments. Along with these two forms--student teaching and interning--a new type of field teaching has also been developed which in many ways attempts to offer another environment for practice teaching. The third type, micro-team teaching, is a team teaching operation which is scaled down and takes place in a single self-contained classroom, with two student teachers and one experienced teacher functioning as a team (Altman, 1969, 1970). (See Appendix A for a complete description of micro-team teaching.) In concert with the objectives of the other forms of field experiences in which the primary purpose is to give the practice teacher direct supervised experience with pupils and to enable the student to integrate all aspects of his professional training (Walters and Halstead, 1962), the micro-team setting differs from the other two forms by providing for extensive team planning time. The consequence of this experience is that the cooperating teacher, who plans with the practice teachers as a member of the team, will hopefully attempt to strengthen the practice teachers' openness to new ideas through cooperative planning activities.

At this point one might ask, "Don't student teachers and interns plan with their cooperating teachers?"; and of course the answer would be yes. However, it appears from a review of the literature describing the student teaching and internship experiences that the planning is primarily designed to outline or examine the practice teacher's instructional tasks. By contrast, in the micro-team all the participants engage in cooperative planning. In addition to this, the practice teacher in the micro-team, after a brief period of orientation of four weeks or less, assumes from time to time, the responsibility for directing his team members, including the cooperating teacher, in planning for instruction. In other words, the leadership responsibility shifts among the team members. The plan has built into it more opportunities for informal interaction between the cooperating teachers and the practice teachers. (See Appendix B for a comparison of the differences between internships, student teaching, and micro-team teaching as it is structured at Wisconsin State University--La Crosse.) Succinctly, then, the basic difference is in the environment with the emphasis on cooperative planning being the most visible independent variable. It was, therefore, the purpose of this study to evaluate the three forms of practice teaching environments in terms of the achievement of the objective--the development of effective teaching. The primary problem then, was what criteria could be used in measuring effective teaching which would be applicable for the evaluation of the different types of practice teaching?

From an examination of the literature, it appeared that professional educators seemed to adhere to a commonality of opinion about the obstacles of evaluating teacher effectiveness--namely, how can one control all the variables, both intervening and independent variables? In the past and presently, the following criteria have been cited: (1) the extent to which the practice teacher shows knowledge of child psychology, educational psychology, and the subject matter he plans to teach; (2) the values of the practice teacher, both educational and life values; (3) the activities in which the practice teacher engages in the classroom; and (4) the degree to which the practice teacher, in the course of his field teaching, has changed in any or all of the criteria cited in (1), (2), or (3) (Haberman, 1964).

Some researchers have even attempted to predict practice teaching success through a study of undergraduate behavior. Variables for predicting practice teaching success have been studied by Mathis and Park who studied twelve variables which included: academic rank in high school, prior work experience, participation in extra-curricular activities, grade average in speech methods courses, pre-student teaching interview ratings, college board tests, I.Q., etc. Their findings indicated there were no correlations of a high enough level to suggest the possibility of a single predictive relationship with the grade made in student teaching (Mathis and Park, 1965).

Medley and Mitzel (1963) proposed measuring teacher effectiveness through means other than direct observation. They contend that, "the effects of teaching on pupils cannot be observed directly in normal classroom behavior, but must be assessed by other means." Burkhard's study (1962) suggested to the researchers the possibility of the examination of the teachers' self concepts as one indirect means of measuring effectiveness. There appears to be evidence that teachers who have a positive self concept are less threatened by students and more willing to accept their ideas during class discussion. Flanders and Simon (1969), reviewing the research on teacher effectiveness, indicated that the percentage of teacher statements that make use of ideas and opinions expressed previously by students is directly related to children's achievement scores as well as their liking the class. Several studies examined how self concepts relate to school achievement. Reeder (1955) found that children achieve lower in terms of their potential if they have a poor self concept. Walsh (1956) reported that bright boys who are low achievers perceive themselves as defensive and limited in communication with their environment. Adult pupils exposed to an instructor who reacts more often to their ideas and opinions, saw themselves as becoming more independent (decision makers) and had a higher measure of work out-put compared with those having contrasting treatments (Flanders, 1963). From the point of view described, it appeared to the investigators that a criterion which might be used for evaluating the practice teacher's effectiveness could be the change in self concept, the supposition being that the more successful practice teaching experience was one which supported or strengthened the practice teacher's self concept, and was one in which the practice teacher was more apt to be openminded or less dogmatic.

STATEMENT OF THE PROBLEM

The principle investigators designed this study to determine if there were one environment--student teaching, interning, micro-team teaching--for practice teaching which was superior to the others. If there were, let us support it; if not, should we continue to administer practice teaching experiences in a variety of settings? If all the settings produce the same results, why not develop the one which is most economical or most convenient for the students and their supervisors? Why should supervisors at La Crosse traverse the state supervising interns and student teachers, when the results yield no higher returns?

Specifically, the study answered the following questions:

(1) Is there a greater change in the practice teacher's self concept in any one of these environments?

(2) In which setting is the practice teacher more apt to be openminded or less dogmatic?

On the basis of fixed criteria, this study is the first attempt to compare one type of practice teaching experience with another, other than through descriptive means. The research design to be described in another section of the report may have use as a model for future research in evaluating the effectiveness of other phases of teacher training programs.

It appears to the investigators that at the beginning of the present decade, major changes and forces in teacher education have begun to have an impact on practice teaching. From performance based objectives to sensitivity training, new approaches have blurred the traditional standards used in evaluating practice teaching. The basic unanimous support for practice teaching given in the past will more than likely be re-examined in light of these new additions to the curriculum. It also appears that the responsibility for developing, administering, and maintaining practice teaching programs may no longer be singularly dominated by the university. Heightened costs in financing the other aspects of the teacher training curriculum will very likely lead to changes in the existing practice teaching programs, particularly in the supervision of practice teachers. For this and other reasons, this study may give developers of newer programs a new understanding about the effectiveness of the undergraduate field experience called practice teaching.

Chapter 2

REVIEW OF THE LITERATURE

The research on practice teaching during the years from 1960 through 1970 basically centered upon surveys, descriptions, and analyses of the behavior of practice teachers. The literature selected for this review was generally limited to sources that appeared to deal with practice teacher attitudes and interpersonal relationships. It was not possible to include a number of descriptive studies dealing with state programs for practice teaching, nor with reports which in the investigators' opinion would be classified as normative in nature. The major sources of data were doctoral dissertations, publications of the Association for Student Teaching, and USOE government publications. Publications containing observations and proposals relative to the topic, as well as reports of research studies which were found in journal articles, special monographs, and reports published by professional associations were also reviewed. Only one or two studies made any empirical attempt to evaluate the different settings or environments for practice teaching. The sequence of this review has been organized according to studies reporting findings of: (a) practice teacher attitudes, (b) practice teacher--cooperating teacher relationships, (c) practice teacher--supervising teacher relationships, and (d) school environment.

PRACTICE TEACHER ATTITUDES

Most of the studies reviewed attempted to assess the changes in practice teachers' attitudes after student teaching. In general, the studies dealt with measuring feelings about children, open-mindedness, dogmatism, and self concept, and in some cases, relating these findings to an evaluation of success in practice teaching. Studies reviewed show a variety of conclusions from a middle ground of no effect on the practice teachers' attitudes to the extremes of either a positive or negative effect upon their attitudes. Kinard (1968) and Watson (1964) in separate studies found there were no significant differences in attitudes after practice teaching. Kinard, surveying one hundred seventy student teachers over a semester, found there was no significant change in the openness of student teachers during their student teaching experiences. Watson, administering the Minnesota Teacher Attitude Inventory (MTAI) to student teachers and interns during a quarter (10 weeks) of practice teaching, found no significant differences between their scores before and after student teaching. Castek (1970) in a similar study found no significant change among practice teachers in attitudes, philosophical views or knowledge of professional secondary education over a semester of student teaching; however, there were significant differences in these areas of professional thought among groups of student teachers in different subject fields and groups having different levels of academic achievement. Gewinner (1967) concluded from his study of one hundred fifty student teachers' attitudes that there was a negative change in the student teacher's attitude about children and teaching as measured by the MTAI. Their scores were significantly lower, at the .10 level of confidence, as a result of student teaching. In a similar study directed by Elliott (1964) to measure the relationship between changes in the openness of student teachers and the openness of their college supervisors and cooperating teachers, he found among other things that a significant negative change occurred in the openness of the student teachers during their student teaching. This negative change occurred for both elementary and secondary student teachers, but did not occur for all colleges involved (six schools were surveyed). McCullough (1962) also found that a negative change in attitudes of student teachers, as measured by the MTAI, occurred during the period of student teaching. Positive changes in student teachers' attitudes did occur in those studies which compared student teachers' attitudes with the attitudes of their cooperating teachers. Student teachers who were directed by cooperating teachers whose attitudes toward pupils were superior to their improved significantly as a group in their attitudes toward pupils (Scott and Brinkly, 1960; and Nunnery, 1968). Concerning openmindedness of student teachers, there was no consensus of findings in the direction of expressed attitudinal changes as measured by various pre- and post-test attitudinal instruments during student teaching. As will be seen in the subsequent paragraphs there was no commonality of opinion concerning the factors which were most influential in changing practice teachers' attitudes.

In other studies dealing with the self concept of the practice teacher, the findings also showed lack of agreement concerning the relationship between the self concept and success in student teaching. Picht (1969) found no significant relationship between self concept and the grade the student received in student teaching. Instead, she found the student teacher's knowledge of subject matter approached a higher degree of significance to the grade than the self concept. By contrast, Garvey's study (1970) showed that those student teachers with a more positive self concept demonstrated less confusion, uncertainty, and conflict in self perception. Garvey concluded that success in student teaching was affected, but not necessarily determined, by a positive view of one's self. In other studies examining either self concept or open and closedmindedness, the findings indicated that practice teachers who manifested a positive self concept demonstrated those attributes identified in the literature as being associated with successful teaching. In Seidman's study (1969), it was found that those student teachers with a highly positive self concept used more indirect teaching behavior--they talked less. Dick (1967) found the more openminded student teacher has a more favorable attitude toward science; and Febinger's study (1965) indicated that the more openminded teacher education students were bright, emotionally mature, adventurous, trustful, confident, self-sufficient, and relaxed, as well as being high achievers.

Contrary to the number of opinion articles appearing in the literature about effective teaching and its positive relationship to openmindedness, neither Johnson (1965) nor Markowitz (1968), in separate studies, found any relationship between this and the student teachers' grades. Like the studies reporting findings on the self concept, the findings on openmindedness show little if any positive relationship to grades. In fact, it has been reported by Johnson (1965) that supervising teachers tended to give higher ratings to student teachers who were nearer the closedminded end of the continuum, or were more dogmatic.

Contradictory findings, lack of agreement, and a range of conclusions characterize the studies reporting student teacher attitude change and affective behavior. From the studies reviewed, it appeared that not only could the practice teaching experience be described as being questionable in terms of developing a positive attitude toward teaching, but more seriously, as one with the potential for having a detrimental effect upon the teacher trainee. If the latter be the case, then teacher education programs may be derelict in one of their basic responsibilities, that is, helping the prospective teacher improve his attitudes about himself, pupils, and the subject matter he teaches. In the next section, the effect that cooperating teachers have upon shaping practice teacher attitudes will be reviewed.

PRACTICE TEACHER--COOPERATING TEACHER RELATIONSHIPS

Only a few studies have been reported concerning the effect of the cooperating teacher on the practice teacher's attitudes and vice versa. Scott and Brinkly (1960), using the MTAI, reported that student teachers working with cooperating teachers whose attitudes toward pupils were superior to theirs improved significantly as a group in their attitudes toward pupils; whereas, there was no change in those student teachers' attitudes who were working with cooperating teachers whose attitudes were inferior to theirs. Cornett (1966) also found that cooperating teachers tend to have more influence than the university based supervising teacher on shaping the practice teachers' attitudes. Rosenfeld's study (1964) indicated that there was also a reverse effect upon the cooperating teacher's attitude as a result of supervising practice teachers. She found that: (1) cooperating teachers who were associated with their first student teachers could be expected to have either a positive or negative change toward their classroom pupils; (2) the most dogmatic cooperating teacher was more likely to have a positive MTAI change score; and (3) cooperating teachers associated with more dogmatic student teachers may be expected to have a positive MTAI score. In contrast to the forementioned studies, Palmer (1965) found that no direct relationships existed between the classroom behavior of the individual practice teacher and that of his cooperating teacher. Student teachers generally showed a uniformly more positive attitude toward teaching as a profession than did cooperating teachers.

Other studies reviewed reported upon perceived roles of the cooperating teacher (Stoumbis, 1966; Fleming, 1969; Garner, 1969) and defined responsibilities of the cooperating teachers. A number of these studies reported upon the desire of practice teachers for more frequent conferences with their cooperating teachers. Guello (1965) reported that practice teachers expected their cooperating teachers to have daily conferences with them. Fleming (1969) also reported that student teachers expressed a need for more frequent communication with their cooperating teachers. Garner (1969), in a study analyzing the role of the cooperating teacher as it was perceived by student teachers, cooperating teachers, cooperating principals, and university supervisors found that individual conferences between the cooperating teacher and the student teacher was the most effective technique in supervising student teachers. In the classroom, practice teachers placed major emphasis on the role of the cooperating teacher to be that of relinquishing the class by providing the opportunities for the practice teacher to assume greater responsibility.

In general, there appears to be a consistency in the findings that conferences are relevant to the practice teacher's needs and are productive in providing guidance as perceived by the professional staff. Furthermore, there seems to be some evidence that the interaction between practice teachers and their cooperating teachers has an effect upon the attitudes of the practice teachers and their cooperating teachers. Unfortunately, this effect may be negative as well as positive.

PRACTICE TEACHER--SUPERVISING TEACHER RELATIONSHIPS

Studies examining university supervisor--practice teacher relationships do not cluster around any particular problem. That is, the studies reviewed deal with role expectations, interpersonal relationships, self evaluation, and satisfaction with the teaching experience.

Kaplan (1967), in a survey of student teachers, their cooperating teachers and university supervisors, found that the major factors which the three groups viewed as contributing to lack of agreement about role expectations were: (1) lack of knowledge about the duties of the college supervisor, such as in evaluation and in acting as a resource consultant; and (2) lack of communication among and within the three groups (college supervisor, cooperating teacher, and practice teacher). In a study of human relationships between college supervisors and student teachers, Carr (1967) found that effective interpersonal relationships resulted when longer observation periods occurred and when the student teacher knew when the college supervisor was coming to observe. In the observation phase Carr's findings indicated that student teachers perceived the effective supervisor as one with a preponderence of passive behavior; that is, he is quiet, attentive, reassuring and unobtrusive. In the conference phase the situation is reversed; the student teacher values active participation by the college supervisor. He wants candid comments about his teaching. Nelson and Hutcherson (1970), using as a criteron the ability to work together successfully in a task situation like student teaching, found that a student teacher's grade could be assumed to be related to whether the cooperating teacher and university supervisor liked or had confidence in each other, and whether the relationship between the university supervisor and the student teacher was harmonious. Monahan (1967), in a study of congruence of educational attitudes of supervising teachers and their student teachers, also found that the student teacher's grade reflected compatibility of philosophy between the student teacher and his supervisor. Tuttle (1967) found that a cooperative analysis of a practice teacher's instruction with opportunities for the practice teacher to develop his own generalizations about teaching appeared to be a valuable asset resulting in successful practice teaching. Tuttle concluded that the more successful student teachers seemed to demonstrate greater initiative and responsibility toward the end of the semester in making decisions in terms of his own personal theory of instruction.

Lawther (1970), from a questionnaire sent to 250 former student teachers, found that the nature of the relationship between the supervising teacher and the student teacher had a direct effect on the number and kinds of successful teaching experiences. His findings indicated that if the student teacher were forced to concentrate his energies on maintaining, improving and clarifying his relationship he may not have much enthusiasm or energy for the larger teaching tasks.

The studies reviewed indicated that the relationship between the practice teacher and the university supervisor is definitely a factor to consider in any evaluation of practice teaching. Some researchers have described its influence in terms of being a significant variable considered by the practice teacher in assessing the extent to which he felt his student teaching experience was successful. Others examined the supervisor's role in an endeavor to determine what needs to be done to enhance the supervisor's effectiveness in the student teaching triad.

SCHOOL ENVIRONMENT

Closely related to studies reporting findings about human relationships in practice teaching are those studies reporting patterns of organizations for student teachers. Unfortunately, only a few studies dealing with the impact of patterns of organizations on student teacher behavior have been reported (Sherwood, 1964; Nichols, 1966; and Weckmuller, 1968). In an experiment conducted by Nichols (1966), in which student teachers were placed on teaching teams for their eight weeks of practice teaching rather than in a conventional program with a single cooperating teacher, he found that the attitudes of the team student teachers toward their experience was markedly more negative than those of the students in conventional placements. Although not significant at the .10 level of significance, Weckmuller (1968), in a study which, among other items, made a comparison of experiences encountered by full-day student teachers with experiences encountered by part-day student teachers, revealed that the organizational pattern had no influence upon the relationship with cooperating teachers. Students engaged in full-day student teaching were more likely to participate in extra-curricular activities and were more likely to experience full integration with the teaching staff; whereas, part-day student teachers were more likely to become involved with meeting the needs of individual students and were more likely to assume greater responsibility for bookkeeping tasks.

In a descriptive study of current practices in student teaching programs Sherwood (1964), by means of questionnaires sent to student teachers and their cooperating teachers and principals, found that the actual teaching experiences of most of the student teachers appeared to be sufficient and varied enough to develop an understanding of the role of a classroom teacher. In contrast to these findings Weckmuller (1968), in a similar survey, found that many activities generally regarded by the university as valuable for student teachers were not experienced by the majority of the respondants.

In a study by Febel (1966) on the organizational climate of the schools in which student teachers did their teaching, she found that student teachers in an "open" climate school perceived the efficacy of the student teaching situation more favorably than student teachers in a "closed" climate school.

Several studies have been reported on follow-up surverys of teachers who participated in various types of preservice teacher training programs. Arends' study (1969) was undertaken to analyze, among other items, the feedback from graduates concerning their preservice practice teaching experiences. A significantly higher percentage of intern graduates expressed satisfaction with their training than did the regular graduates. Steinbach (1969) conducted a study to identify those difficulties most frequently experienced by beginning elementary teachers and to discover how such difficulties related to the undergraduate preparation of those teachers. Steinbach concluded that the internship experience seemed to decrease the number of problems encountered in some areas of difficulty while helping the teacher to become more aware of problems in other areas. It appeared, according to Steinback, that the internship program had a positive effect on beginning teachers since the supervisor of former interns reported fewer and less severe difficulties than did the supervisors of regular graduates.

SUMMARY

The research of the past ten years points up the gaps in our knowledge associated with the human factors affecting practice teachers. Findings from the studies reported upon indicate a variety of contradictory results. Where some studies show improvement in practice teacher attitudes as a result of practice teaching, other studies report either no improvement or a negative effect.

It appears that more holistic research needs to be undertaken to assess the total school organizational climate. Measures of self concept, openmindedness, dogmatism, etc., need to go beyond using them as means for determining the effect of either the cooperating teacher or supervisory teacher upon the practice teacher. It appears that the efficacy of the practice teaching experience rests with the organizational climate of the school; that is, the sensitivities of the staff toward the personal and professional feelings of the practice teacher.

Chapter 3

RESEARCH METHOD

The practice teaching population of Wisconsin State University--La Crosse elementary education seniors and their cooperating teachers, each semester of the 1970-71 academic year, participated in the experiment. Three instruments and a questionnaire were used to gather data for this study. The three tests were the "This I Believe" Test (TIB), the Philosophies of Human Nature Scale (PHN), and the Minnesota Teacher Attitude Inventory (MTAI). The Practice Teaching Inventory, a questionnaire, was prepared by the investigators for use in this study (see Appendix C). The data was analyzed statistically by analysis of variance and Chi-square techniques. A complete description of the research method is given in the pages which follow.

SUBJECTS

All the practice teachers in elementary education at Wisconsin State University--La Crosse during the fall and spring semesters of the 1970-71 academic year, and their cooperating teachers participated in the study except for three.* A total of one hundred ninety practice teachers and cooperating teachers participated. This total consisted of one hundred twenty-one practice teachers and sixty-nine cooperating teachers.

A random selection determined who would be pre-tested and post-tested, which was in accordance with the experimental design used in this study. Letters were sent to approximately one-half of the subjects at the beginning and close of each semester requesting their attendance at the designated testing center on the campus (see Appendix D). The schedule for the testing was as follows:

---

*Two cooperating teachers working with an intern refused to participate in the experiment. One intern was unable to be tested at any of the times arranged, and it was impossible to arrange a time suitable for her.

Semester I	
Pre-test	
Saturday, September 19, 1970	9:00-11:30 A.M.
Saturday, September 26, 1970	9:00-11:30 A.M.
Post-test	
Tuesday, January 12, 1971	4:15-5:30 P.M.
Wednesday, January 13, 1971	4:15-5:30 P.M.
Semester II	
Pre-test	
Wednesday, January 27, 1971	2:00-4:30 P.M.
Wednesday, February 10, 1971	4:30-5:30 P.M.
Post-test	
Tuesday, May 4, 1971	4:30-5:30 P.M.
Wednesday, May 5, 1971	4:30-5:30 P.M.

Cooperating teachers were tested only once during the project, even though they might have supervised practice teachers each semester. Consequently, test data during the second semester were gathered only on cooperating teachers who were not part of the first semester investigation.

INSTRUMENTS

TIB

The TIB test was developed specifically as a measure of conceptual or belief systems by O. J. Harvey, University of Colorado, Boulder, Colorado. It is a semi-projective sentence completion test which requires an individual to indicate his beliefs about a number of socially and personally significant concept referents. The completions written by the subjects are evaluated with regard to several dimensions involving both structure and content. Respondents are then classified into one of the four principal belief systems posited by Harvey, Hunt, and Schroeder (1961).

Harvey briefly describes how respondents are classified in the following manner:

> Specifically, respondents are classified as representing System 1 if their completions denote such attributes as high absolutism, high tautologicalness, high frequency of platitudes and normative statements, high ethnocentrism, high religiosity, polarized judgments, and identification with the dominant American motif.
>
> Individuals are categorized as representing System 2 if in addition to being highly evaluative and absolute they express strong negative attitudes toward such referents as "marriage," "religion," and others reflective of the dominant American theme without giving much thought to the possible results of negating these referents or consideration of alternatives.
>
> Responses to the TIB are scored as indicating System 3 functioning if they indicate more relativism and less evaluativeness than Systems 1 and 2 and at the same time express strong positive beliefs about friendship, people and general humanism and imply that friendship and/or people are a necessary and critical aspect of their existence.
>
> System 4 functioning is inferred from the TIB responses that imply a high degree of novelty *and* appropriateness, independence without negativism, high relativism and contingency of thought, openness to new information, the general use of multiple dimensions instead of single dimensions in their judgments and statements that are highly integrated and informationally loaded. (Harvey, "Belief Systems and Education: Some Implications for Change," pp. 7-8; referred to hereafter as BSE for lack of date.)

Harvey (BSE, p. 8) reports the average interjudge reliability of scorings of the TIB, based on six specific comparisons, as being .91. Test-retest reliabilities, within one week and after six months, have been in the high .80's.

The validity of the test, as well as Harvey's four posited belief system, would appear to be acceptable as evidenced by several studies (Harvey, White, Prather, Alter and Hoffmeister, 1965; and Harvey, Prather, White and Hoffmeister, 1968). A copy of this instrument may be found in Appendix C.

PHN

The PHN was developed by Lawrence S. Wrightsman, Jr., George Peabody College for Teachers, Nashville, Tennessee, in an attempt to measure a person's beliefs about human nature and, specifically, his beliefs about the interpersonal aspects of human nature. Wrightsman (1964, p. 744) concluded that:

> human nature may be seen as composed of several independent dimensions. The basic dimensions, which have held the concern of theorists over the years, are six continua: (1) Trustworthiness, or the extent to which people are seen as moral, honest, and reliable; (2) Altruism, or the extent of unselfishness, sincere sympathy, and concern for others present in people; (3) Independence, or the extent to which a person can maintain his convictions in the face of society's pressures toward conformity; (4) Strength of Will and Rationality, or the extent to which people understand the motives behind their behavior and the extent to which they have control over their own outcomes; (5) The Complexity of Human Nature, a dimension which cuts across the above continua and deals with the extent to which people are complex and hard to understand or simple and easy to understand; and (6) The Variability in Human Nature, which also cuts across the first four dimensions and relates to the extent of individual differences in basic nature and the basic changeability in human nature.

Wrightsman and Satterfield (1967, p. 1) described the construction of the scale as follows:

> Likert-type attitude scales were constructed to measure each dimension. Each subscale has 14 items and a possible range of scores from +42 to -42. The four subscales measuring the substantive dimensions may be summed to give a general Favorableness of Human Nature Score (sometimes referred to as a Positive-Negative Score) (range from +168 to -168) and the two subscales on Complexity and Variability may be summed to give a score on the Multiplexity of Human Nature (range from +84 to -84).

Numerous validation studies have been undertaken and sufficient validity of the instrument seems to exist to permit its use in this study (Wrightsman, 1964; Wrightsman and Noble, 1965; and Wrightsman and Satterfield, 1967). A further study by Wrightsman (1965) revealed that favorable beliefs about human nature are related to high positive scores on the MTAI ($r = .50$).

Reliability studies (Wrightsman, 1964; and Wrightsman, 1964a) have revealed split-half reliability coefficients for the six subscales of from .60 to .92. Test-retest reliability coefficients, with a three month interval between testings, ranged from .52 to .84. When the first four subscales were summed to give a general Favorability Score, a coefficient of .90 was obtained (Wrightsman, 1964, p. 746). This instrument may be examined in Appendix C.

MTAI

The instrument used to measure the attitudes of the subjects in the study was the Minnesota Teacher Attitude Inventory, Form A, developed by Walter W. Cook, Carroll H. Leeds, and Robert Callis. It consists of 150 attitude statements which the subject responds to on a five choice scale ranging from strongly agree to strongly disagree. The possible range of scores on the MTAI is from a positive 150 to a negative 150. A high positive score would tend to indicate a teacher who "should be able to maintain a state of harmonious relations with his pupils characterized by mutual affection and sympathetic understanding ... The teacher and pupils should work together in a social atmosphere of cooperative endeavor, of intense interest in the work of the day, and with a feeling of security growing from a permissive atmosphere of freedom to think, act and speak one's mind with mutual respect for the feelings, rights and abilities of others" (Cook, Leeds and Callis, 1951, p. 3). At the other end of the scale would be found a teacher who "...attempts to dominate the classroom ... there is a feeling of mutual distrust and hostility ... The teacher tends to think in terms of his status, the correctness of the position he takes on classroom matters, and the subject matter to be covered rather than in terms of what the pupil needs, feels, knows, and can do" (Cook, Leeds and Callis, 1951, p. 3).

The validity of an instrument of this type is certainly a matter of major concern. A considerable amount of evidence exists which tends to support its validity. Cook, Leeds and Callis (1951, pp. 10-11) report several validity studies in the test manual. The preliminary tryout forms were administered to one hundred superior and one hundred inferior teachers as designated by their principals in approximately seventy schools in Pennsylvania and Ohio. One hundred eighty-eight of the 756 tryout items were found to discriminate at the ten percent level. The first experimental form of the Inventory was constructed from 164 items of the original 756 tryout items. The validity of the Experimental Form was determined by administering it to a random sample of one hundred teachers of grades 4-6 and correlating their scores with three external criteria of teacher-pupil rapport: (1) the rating of the teachers by their pupils on the Pupil-Teacher Rating Scale; (2) the rating of the teachers by their principals on the Principal-Teacher Rating Scale; and (3) the rating of the teachers by a specialist in the area of teaching effectiveness on a modification of Baxter's Rating Scale of the Teacher's Personal Effectiveness. The results of these ratings correlated with the Experimental Form at the .01 level of significance.

Two further studies of validity were undertaken by Cook, Leeds and Callis (1951, pp. 13-14), this time with regard to Form A, the final published form. A study in South Carolina, identical to the validity study of the Experimental Form, produced correlations between Form A and the three external criteria significant at the .05 level. The Missouri study differed in minor ways from the South Carolina and Experimental Form studies, but fairly high correlations coefficients were still obtained between Form A and the three external criteria.

Another area of concern in the use of an instrument of this type is its susceptibility to faking. Research on this matter is more equivocal. Cook, Leeds and Callis (1951, p. 13) report a study in which groups of first quarter juniors at the University of Minnesota were given different types of instructions in order to measure the effect on MTAI scores. One group was told to "fake good" at the first testing and given standard instructions at the second testing. A second group received standard instructions at the first testing and told to "fake good" at the second. A third group was given standard instructions at both testings. Both the second and third groups showed significant improvements in their mean scores at the .01 level. Since both the second and third groups significantly improved, and the third groups was not told to try to improve their scores, Cook, Leeds and Callis conclude that "the MTAI is only slightly susceptible to attempts to 'fake good'" (1951, p. 13).

Rabinowitz (1954) and Polmantier and Ferguson (1960) report studies in which they found highly significant changes in scores over two testings when instructions to fake were given. Their conclusions were that the MTAI was highly susceptible to faking. One possible fault in the conclusions might be pointed out, however. In both studies, standard instructions were given for the first testings. The faking instructions, good or bad, were given for the second testings, after the subjects had gained insight into the test as a result of the first administration. Cook, Leeds and Callis reported changes in scores even for the group receiving standard instructions both times. Therefore, it seems to be a possibility that the significant changes in scores measured by Rabinowitz and Polmantier and Ferguson occurred simply as a result of the prior testing exposure. The MTAI may be examined in Appendix C.

Practice Teaching Inventory

The Practice Teaching Inventory was developed by the project directors to provide in part a basis on which to explain significant differences, if they occurred, in scores on the MTAI, TIB, and PHN instruments. The questionnaire surveyed the opinions of practice teachers and cooperating teachers about the nature of the practice teaching environment. A Likert-type scale was constructed to measure each question in the survey. A different version of the test was given to the practice teachers and the cooperating teachers. The questions were the same, but were worded to be interpreted by the practice teacher or the cooperating teacher (see Appendix C). This instrument was administered only to subjects in the experimental, or post-practice teaching groups.

TESTING PROCEDURES

The same testing procedures were used each time the series of instruments was administered (see Appendix E). At the close of each semester, in addition to the tests described in the Appendix, the subjects were given the Practice Teaching Inventory. The procedures used in administering this instrument were the same as those used in administering the PHN. The Practice Teaching Inventory with separate forms for the cooperating teachers and practice teachers was administered following the Minnesota Teacher Attitude Inventory.

EXPERIMENTAL DESIGN

The experimental design used in this study was the separate-sample pretest-posttest design, design number twelve as discussed by Campbell and Stanley (1966, pp. 53-54). It may be diagrammed as:

R O (X)
R X O

and explained, "... rows represent randomly equivalent sub-groups, the parenthetical X standing for a presentation of X irrelevant to the argument. One sample is measured prior to the X, an equivalent one subsequent to X" (p. 53). Several weaknesses are inherent in the design in the control of sources of internal validity. One of its main weaknesses is its failure to control for history, "... the specific events occurring between the first and second measurement in addition to the experimental variable" (p. 5). Maturation, "processes within the respondents operating as a function of the passage of time per se (not specific to the particular events)" (p. 5), is also a rival explanation for changes occurring between observations. Mortality, the "... differential loss of respondents from the comparison groups" (p. 5), can result in a population difference between the different observation periods. Campbell and Stanley (1966, p. 54) suggest that "... the elimination of the pretest scores of those who have become unavailable by the time of the posttest, thus making the pretest and posttest more comparable", will result in some control over this source of invalidity. This design, which "moves the laboratory into the field situation to which the researcher wishes to generalize" (p. 54), results in superior external validity and generalizability. Design number twelve was chosen for this study because it seemed to be the most powerful available under the conditions with which these experimenters would have to operate.

Chapter 4

ANALYSIS OF DATA

STATISTICAL METHODS

Analysis of Variance

The statistical model used in this study for the analysis of data gathered with the TIB, the PHN, and the MTAI was the two-way analysis of variance unequal cell frequencies model. A computer program using the general least-squares solution for the sums of squares was used to perform the necessary computations. The least-squares solution, while more computationally difficult than the harmonic mean solution, was used because, "There is some evidence to indicate that the resulting tests, in the least-squares case, are the more powerful" (Winer, 1962, p. 224).

Since this study involved all the practice and cooperating teachers in elementary education at Wisconsin State University--La Crosse during the two semesters the study was in progress, the Case 1 (both factors fixed) model for obtaining the expected values of mean squares was used.

Table 1

EXPECTED VALUES OF MEAN SQUARES

Mean Squares	Case 1 (Both factors fixed)
MS_a	$\sigma_\epsilon^2 + nq\sigma^2_\alpha$
MS_b	$\sigma_\epsilon^2 + np\sigma_\beta^2$
MS_{ab}	$\sigma_\epsilon^2 + n\sigma_{\alpha\beta}^2$
MS_{error}	σ_ϵ^2

The appropriate F-ratios can then be seen to be:

$$F_a = \frac{MS_a}{MS_{error}} \qquad F_b = \frac{MS_b}{MS_{error}} \qquad F_{ab} = \frac{MS_{ab}}{MS_{error}}$$

An alpha level of .05 was used throughout the analysis for the purpose of determining significant F-ratios.

Chi-square

A Chi-square analysis was performed on each item in the questionnaire to determine whether significantly different response patterns occurred among the three practice teaching formats than would be expected from chance operating alone. An alpha level of .05 was again used to identify items in which the observed frequencies differed significantly from the expected values.

SEMESTER I

Practice Teacher Data Analysis

Scores were obtained for a total of 57 practice teachers, 28 in the control, or pre-practice teaching group, and 29 in the experimental, or post-practice teaching group. A complete list of the cell frequencies for all the practice teacher data analyzed may be seen in Table 2.

Table 2

SEMESTER I--PRACTICE TEACHERS
CELL FREQUENCIES

	Practice Teaching Format			
Group	Student Teaching	Micro-team	Intern	Totals
Control	14	11	3	28
Experimental	12	12	5	29
Totals	26	23	8	57

Table 3 gives the mean scores obtained by the practice teachers on the three instruments which were analyzed statistically with the analysis of variance program.

Table 3

PRACTICE TEACHERS
CELL MEANS

		Practice Teaching Format		
Instrument	Group	Student Teaching	Micro-Team	Intern
MTAI				
	Control	49.71	47.72	75.33
	Experimental	50.83	47.08	51.00
PHN				
C-Scores (Complexity)	Control	8.35	12.00	23.33
	Experimental	10.50	15.83	14.60
S-Scores (Strength of Will and Rationality)	Control	7.00	13.18	9.33
	Experimental	15.33	9.75	13.80
I-Scores (Independence)	Control	-2.50	2.45	-3.00
	Experimental	9.91	-.92	3.20
A-Scores (Altruism)	Control	1.42	2.63	3.33
	Experimental	9.91	2.91	1.60
V-Scores (Variability)	Control	15.00	15.90	19.66
	Experimental	16.16	16.91	17.00
T-Scores (Trustworthiness)	Control	8.21	12.36	11.00
	Experimental	11.91	4.33	9.20
C & V-Scores (Multiplexity)	Control	23.35	27.90	43.00
	Experimental	26.66	32.75	31.60
T,S,A, & I-Scores (Positivism)	Control	14.14	30.63	10.66
	Experimental	47.08	16.08	27.80
TIB				
Cynicism Scores	Control	1.00	1.18	1.17
	Experimental	1.25	1.17	1.00
Systems Scores	Control	1.14	1.36	1.00
	Experimental	1.50	1.50	1.00
Evaluativeness Scores	Control	3.29	2.64	2.83
	Experimental	3.25	2.50	2.00
Openness Scores	Control	1.96	2.82	2.17
	Experimental	1.92	2.38	2.80

The F-ratios obtained from the analyses of variance are summarized in Table 4.

Table 4

SUMMARY OF ANOVA
PRACTICE TEACHERS

Instrument	Source of Variation					
	Groups		Practice Teaching Format		Interaction Term	
	F-ratio	d.f.	F-ratio	d.f.	F-ratio	d.f.
MTAI	0.19	1,51	0.77	2,51	0.76	2,51
PHN						
C-Scores	0.26	1,51	1.54	2,51	1.14	2,51
S-Scores	1.39	1,51	0.02	2,51	2.30	2,51
T-Scores	2.55	1,51	0.41	2,51	2.60	2,51
A-Scores	1.26	1,51	0.41	2,51	0.84	2,51
V-Scores	0.05	1,51	0.19	2,51	0.13	2,51
T-Scores	0.35	1,51	0.15	2,51	1.59	2,51
C & V-Scores	0.23	1,51	1.73	2,51	0.84	2,51
T,S,A, & I-Scores	1.09	1,51	0.23	2,51	2.60	2,51
TIB						
Cynicism Scores	0.58	1,51	0.25	2,51	0.97	2,51
Systems Scores	1.00	1,51	0.92	2,51	0.18	2,51
Evaluativeness Scores	0.63	1,51	5.57*	2,51	0.63	2,51
Openness Scores	0.31	1,51	4.73*	2,51	1.36	2,51

*significant at the .05 level

$F_{.05}$ for 1 and 51 d.f. = 4.08

$F_{.05}$ for 2 and 51 d.f. = 3.23

As can be seen in this table, only two F-ratios were significant. The TIB score for evaluativeness yielded an F-ratio of 5.57, significant at the .05 level, for the practice teaching format. As can be seen by looking at Table 3, the mean scores for student teachers were higher than those for either microteam teachers or interns. This would tend to indicate that the student teachers were more apt to imply "good-bad, right-wrong, and the general tendency to use a polarized either/or scaling system for themselves. A highly evaluative person would be one who sees a large number of 'wrongs' in the world and bothers rarely to mention what's right" (Harvey, 1971).

The TIB score for openness resulted in a significant F-ratio of 4.73 with respect to the practice teaching format. Table 3 reveals that both micro-team teachers' and interns' mean scores were higher than the mean scores for student teachers. Harvey (1971) explains a higher score on openness as revealing an "individual (who) would be tolerant toward or receptive to some idea that runs counter to his own deeply held beliefs ... Low openness would imply high dogmatism or certitude and the implication that the individual had some eternal truth. Low closedness or high openness would imply, conversely, a willingness to examine one's own position and to consider seriously an ideology counter to one's own, although this does not necessarily mean that the respondent would internalize it as his own."

Questionnaire Data

The Chi-square analysis of the data gathered on the first semester practice teachers yielded no significant values on any of the forty items composing the Practice Teaching Inventory. As can be seen in Table 5, none of the Chi-squares exceeded the 15.507 Chi-square needed for significance at the .05 level. Appendix F contains the Chi-square contingency table for this data.

Cooperating Teacher Data Analysis

The data gathered from the cooperating teachers for the first semester practice teachers yielded scores for 50 cooperating teachers. The reason for a difference in the number of cooperating teachers and practice teachers is that in the micro-team setting each cooperating teacher has two practice teachers, and in the intern setting, the intern works with more than one cooperating teacher.

The cell frequencies for the cooperating teacher analysis is reported in Table 6.

Table 5

CHI-SQUARE ANALYSIS OF QUESTIONNAIRE DATA
PRACTICE TEACHERS

Item Number	Chi-square Value		Item Number	Chi-square Value
1	5.115		21	9.565
2	5.662		22	6.021
3	4.368		23	8.712
4	6.138		24	6.182
5	5.860		25	13.592
6	12.711		26	4.281
7	11.778		27	2.142
8	12.254		28	8.506
9	3.141		29	4.198
10	13.087		30	7.334
11	7.011		31	4.765
12	4.128		32	13.985
13	8.409		33	7.301
14	6.981		34	4.585
15	9.109		35	5.964
16	8.107		36	8.732
17	14.607		37	7.501
18	3.383		38	3.786
19	9.231		39	6.184
20	7.017		40	1.472

Chi-square for 8 d.f. at .05 level = 15.507

Table 6

SEMESTER I--COOPERATING TEACHERS
CELL FREQUENCIES

	Practice Teaching Format			
Group	Student Teaching	Micro-team	Intern	Totals
Control	15	8	8	31
Experimental	11	3	5	19
Totals	26	11	13	50

Table 7 reports the mean scores on the MTAI, the PHN, and the TIB for the cooperating teachers, and the F-ratios obtained from the analysis of variance programs are listed in Table 8.

Table 7

COOPERATING TEACHERS
CELL MEANS

Instrument	Group	Practice Teaching Format: Student Teaching	Micro-Team	Intern
MTAI				
	Control	72.33	50.75	38.00
	Experimental	56.90	43.00	48.80
PHN				
C-Scores (Complexity)	Control	54.86	54.50	49.62
	Experimental	53.00	60.66	42.20
S-Scores (Strength of Will and Rationality)	Control	55.06	54.87	56.50
	Experimental	51.00	56.00	58.80
I-Scores (Independence)	Control	46.13	49.75	44.12
	Experimental	47.72	40.66	49.60
A-Scores (Altruism)	Control	53.40	51.50	44.12
	Experimental	52.18	41.33	54.00
V-Scores (Variability)	Control	53.20	58.00	60.75
	Experimental	55.27	56.66	50.60
T-Scores (Trustworthiness)	Control	56.00	52.50	48.00
	Experimental	56.18	48.33	57.00
C & V-Scores (Multiplexity)	Control	24.06	28.50	26.37
	Experimental	24.27	33.33	8.80
T,S,A, & I-Scores (Positivism)	Control	42.60	40.62	24.75
	Experimental	39.09	18.33	51.40
TIB				
Cynicism Scores	Control	1.00	1.00	1.43
	Experimental	1.18	1.00	1.10
Systems Scores	Control	1.43	1.25	1.00
	Experimental	1.23	1.00	1.60
Evaluativeness Scores	Control	3.75	3.06	3.64
	Experimental	3.86	2.67	3.20
Openness Scores	Control	1.93	2.19	1.56
	Experimental	1.77	2.17	2.40

Table 8

SUMMARY OF ANOVA
COOPERATING TEACHERS

Instrument	Source of Variation					
	Groups		Practice Teaching Format		Interaction Term	
	F-ratio	d.f.	F-ratio	d.f.	F-ratio	d.f.
MTAI	0.35	1,44	1.81	2,44	0.44	2,44
PHN						
C-Scores	0.36	1,44	2.95	2,44	1.10	2,44
S-Scores	0.21	1,44	0.66	2,44	0.48	2,44
I-Scores	0.02	1,44	0.02	2,44	0.80	2,44
A-Scores	0.00	1,44	0.63	2,44	1.28	2,44
V-Scores	0.35	1,44	0.52	2,44	1.46	2,44
T-Scores	0.14	1,44	0.54	2,44	0.55	2,44
C & V-Scores	0.54	1,44	1.00	2,44	1.49	2,44
T,S,A, & I-Scores	0.00	1,44	0.11	2,44	0.81	2,44
TIB						
Cynicism Scores	0.02	1,44	2.50	2,44	2.38	2,44
Systems Scores	0.00	1,44	0.19	2,44	0.98	2,44
Evaluativeness Scores	0.22	1,44	3.37*	2,44	0.47	2,44
Openness Scores	0.24	1,44	0.61	2,44	1.35	2,44

*significant at the .05 level

$F_{.05}$ for 1 and 44 d.f. = 4.08

$F_{.05}$ for 2 and 44 d.f. = 3.23

As Table 8 shows, only one of the computed F-ratios is large enough to be significant. This is the F-ratio computed for differences between practice teaching formats on the TIB dimension of evaluativeness. The computed value of 3.37 exceeds the tabled F of 3.23--thus showing significance at the .05 level. A perusal of the cell means for evaluativeness reported in Table 7 reveals the fact that cooperating teachers of micro-team practice teachers are lower on this dimension than either of the other two practice teaching formats. This would appear to indicate a more positive, less pessimistic view of human nature for the micro-team cooperating teachers than for the other two groups.

Questionnaire Data

An examination of Table 9 reveals significant Chi-squares on two items of the Practice Teaching Inventory--items number 22 and 36. An analysis of the Chi-square contingency tables (Appendix F) for item 22 reveals that cooperating teachers of micro-team teachers and interns encouraged somewhat less use of school records than the student teachers' cooperating teachers. This would not appear to be a particularly significant finding.

An examination of the Chi-square contingency table for item 36 does reveal some rather significant findings, however. Micro-team cooperating teachers yielded much more positive reactions to this item which dealt with the adequacy of time allotted for weekly and daily planning than did cooperating teachers under the other two practice teaching formats. This would appear to be a rather significant point.

Table 9

CHI-SQUARE ANALYSIS OF QUESTIONNAIRE DATA
COOPERATING TEACHERS

Item Number	Chi-square Value	Item Number	Chi-square Value
1	4.456	21	4.319
2	6.795	22	17.389*
3	0.847	23	15.169
4	6.426	24	3.141
5	6.266	25	3.366
6	10.999	26	10.105
7	11.294	27	4.345
8	7.379	28	3.499
9	0.995	29	9.531
10	8.826	30	7.701
11	4.859	31	5.149
12	7.746	32	2.378
13	2.948	33	9.654
14	6.267	34	2.528
15	4.069	35	5.899
16	5.538	36	15.919*
17	4.925	37	3.599
18	7.499	38	4.209
19	1.240	39	3.077
20	8.842	40	6.072

*Chi-square for 8 d.f. at .05 level = 15.507

SEMESTER II

Practice Teacher Data Analysis

Sixty-four practice teachers, 34 in the control or pre-practice teaching group, and 30 in the experimental or post-practice teaching group, participated in the second semester replication of the study. A full breakdown of the number of subjects in each category is given in Table 10.

Table 10

SEMESTER II--PRACTICE TEACHERS
CELL FREQUENCIES

	Practice Teaching Format			
Group	Student Teaching	Micro-team	Intern	Totals
Control	16	15	3	34
Experimental	17	9	4	30
Totals	33	24	7	64

The mean scores obtained by the practice teachers on the MTAI, the PHN, and the TIB are reported in Table 11. (See page 35.)

The results obtained by analyzing the scores by use of an analysis of variance program are to be found in Table 12. (See page 36).

As Table 12 shows, several of the F-ratios were significant. The PHN S-Score (strength of will and rationality) analysis resulted in the F-ratios for the two main effects (groups and practice teaching format) as well as the interaction terms being significant. An analysis of the cell means reported in Table 11 reveals that while both student teachers and micro-team teachers received lower post-test scores on this factor, the interns' mean scores increased over the semester. This would seem to indicate that the micro-team teachers and student teachers decreased in the extent to which they believed that "people have control over their own outcomes and

... understand the motives behind their behavior" (Wrightsman, 1967, p. 12), while the interns' beliefs in this regard increased, although only slightly.

Table 11

PRACTICE TEACHERS
CELL MEANS

Instrument	Group	Practice Teaching Format: Student Teaching	Micro-Team	Intern
MTAI				
	Control	58.81	65.53	48.66
	Experimental	49.70	53.44	51.50
PHN				
C-Scores (Complexity)	Control	13.18	4.53	19.33
	Experimental	11.23	13.88	13.50
S-Scores (Strength of Will and Rationality)	Control	13.75	15.60	3.66
	Experimental	12.82	2.00	5.50
I-Scores (Independence)	Control	2.81	2.93	-2.66
	Experimental	2.00	-2.22	-4.75
A-Scores (Altruism)	Control	4.37	5.93	2.66
	Experimental	2.35	-2.55	2.25
V-Scores (Variability)	Control	20.06	13.20	15.33
	Experimental	16.35	18.11	13.00
T-Scores (Trustworthiness)	Control	7.31	11.26	8.00
	Experimental	9.76	0.66	5.25
C & V-Scores (Multiplexity)	Control	33.25	17.73	34.66
	Experimental	27.58	32.00	26.50
T,S,A, & I-Scores (Positivism)	Control	28.25	35.73	11.66
	Experimental	26.94	-2.11	8.25
TIB				
Cynicism Scores	Control	1.47	1.40	1.33
	Experimental	1.44	1.61	1.25
Systems Scores	Control	1.44	1.47	1.00
	Experimental	1.35	2.11	2.25
Evaluativeness Scores	Control	2.72	2.53	2.83
	Experimental	2.50	2.61	2.38
Openness Scores	Control	2.38	2.80	2.00
	Experimental	2.74	3.00	3.00

Table 12

SUMMARY OF ANOVA
PRACTICE TEACHERS

Instrument	Source of Variation					
	Groups		Practice Teaching Format		Interaction Term	
	F-ratio	d.f.	F-ratio	d.f.	F-ratio	d.f.
MTAI	1.39	1,58	0.35	2,58	0.16	2,58
PHN						
C-Scores	0.38	1,58	1.61	2,58	2.26	2,58
S-Scores	6.17*	1,58	3.35*	2,58	4.63*	2,58
I-Scores	1.08	1,58	1.21	2,58	0.34	2,58
A-Scores	2.03	1,58	0.07	2,58	0.62	2,58
V-Scores	0.02	1,58	0.83	2,58	1.14	2,58
T-Scores	1.25	1,58	0.24	2,58	2.86	2,58
C & V-Scores	0.07	1,58	1.13	2,58	2.35	2,58
T,S,A, & I-Scores	4.20*	1,58	1.28	2,58	2.92	2,58
TIB						
Cynicism Scores	0.07	1,58	0.20	2,58	0.20	2,58
Systems Scores	1.56	1,58	0.90	2,58	1.62	2,58
Evaluativeness Scores	0.33	1,58	0.03	2,58	0.27	2,58
Openness Scores	4.61*	1,58	2.12	2,58	0.89	2,58

*significant at the .05 level

$F_{.05}$ for 1 and 58 d.f. = 4.00

$F_{.05}$ for 2 and 58 d.f. = 3.15

One significant F-ratio was also obtained on the PHN dimension of positivism, obtained by summing the scores on four of the subtests (T,S,A, and I). The main effect of Groups yielded an F-ratio significant at the .05 level. Table 11 of cell means shows all groups receiving lower post-test than pre-test scores, with micro-team teachers revealing the largest change. This would seem to indicate that the micro-team teachers over their semester's experience became much more negative in their general view of human nature. This again would seem to be inconsistent with the result obtained for the first semester.

An increase occurred in all three practice teaching formats in TIB openness scores as evidenced by a significant F-ratio of 4.61 for Groups. Table 11 of cell means shows that all groups increased their scores on this dimension, with interns making the largest gain and micro-team teachers starting with the highest pre-test mean and finishing with a post-test mean greater than that of the student teachers and equal to that of the interns.

Questionnaire Data

The analysis of the questionnaire data as reported in Table 13 shows significant Chi-square values on three items--numbers 6, 18, and 23. A perusal of the Chi-square contingency table for item 6 (Appendix F) yields the fact that interns and micro-team teachers felt much more free to criticize their cooperating teachers' proposed lesson plans than did student teachers. This would certainly indicate a more open and free relationship between micro-team teachers, and to some extent, interns, and their cooperating teachers.

An examination of the contingency table for item 18 would again seem to support the idea that the most open relationship existed between micro-team teachers and their cooperating teachers. Most micro-team teachers seemed to feel themselves free to discuss discipline problems with their cooperating teachers at all times, while student teachers and interns seemed to feel somewhat less free and open.

The third significant Chi-square occurred on item 23. The contingency table (Appendix F) indicates micro-team teachers and interns being much more satisfied with the amount of time available to them for planning than were the student teachers. Since more planning time is one of the reputed strengths of the micro-team plan, it is encouraging to note these results.

Table 13

CHI-SQUARE ANALYSIS OF QUESTIONNAIRE DATA
PRACTICE TEACHERS

Item Number	Chi-square Value
1	3.532
2	11.051
3	3.730
4	5.983
5	1.843
6	19.798*
7	4.963
8	9.429
9	8.143
10	12.829
11	7.753
12	5.540
13	4.281
14	10.446
15	9.059
16	5.044
17	14.199
18	17.266*
19	13.104
20	7.928
21	13.718
22	15.343
23	15.584*
24	6.144
25	6.679
26	8.576
27	6.161
28	6.494
29	12.337
30	11.325
31	5.065
32	8.766
33	7.417
34	8.868
35	3.442
36	9.414
37	7.246
38	8.338
39	13.364
40	8.928

*significant at the .05 level

Chi-square for 8 d.f. at the .05 level = 15.507

Cooperating Teacher Data Analysis

Fifty-three cooperating teachers participated in the second semester of the study. Again, the number of cooperating teachers is less than the number of practice teachers because of the different supervision practices under the different practice teaching formats. The number of cooperating teachers working under the different formats is reported in Table 14. (See page 39.)

The mean scores on the first three instruments obtained by the cooperating teachers are reported in Table 15. (See page 39.)

Table 14

SEMESTER II--COOPERATING TEACHERS
CELL FREQUENCIES

Group	Practice Teaching Format: Student Teaching	Micro-team	Intern	Totals
Control	20	9	2	31
Experimental	17	3	2	22
Totals	37	12	4	53

Table 15

COOPERATING TEACHERS
CELL MEANS

Instrument	Group	Practice Teaching Format: Student Teaching	Micro-Team	Intern
MTAI				
	Control	70.85	44.11	19.00
	Experimental	45.29	43.00	56.00
PHN				
C-Scores (Complexity)	Control	9.95	11.88	2.50
	Experimental	12.82	18.66	3.00
S-Scores (Strength of Will and Rationality)	Control	10.45	12.00	12.00
	Experimental	8.11	14.00	7.50
I-Scores (Independence)	Control	3.10	4.11	-11.00
	Experimental	1.41	-1.33	-3.00
A-Scores (Altruism)	Control	12.65	5.88	-13.00
	Experimental	7.00	-0.66	7.50
V-Scores (Variability)	Control	12.95	16.55	7.00
	Experimental	13.94	14.66	24.00
T-Scores (Trustworthiness)	Control	13.55	8.11	-12.00
	Experimental	11.29	6.33	16.00
C & V-Scores (Multiplexity)	Control	22.90	28.44	9.50
	Experimental	26.76	33.33	27.00
T,S,A, & I-Scores (Positivism)	Control	39.75	30.11	-24.00
	Experimental	27.82	18.33	28.00
TIB				
Cynicism Scores	Control	1.18	1.00	1.25
	Experimental	1.47	1.00	2.00
Systems Scores	Control	1.25	1.44	1.00
	Experimental	1.47	1.00	1.00
Evaluativeness Scores	Control	3.53	3.11	4.25
	Experimental	3.06	2.67	2.00
Openness Scores	Control	2.08	2.22	1.00
	Experimental	2.18	2.17	3.00

Table 16 contains the results of the analysis of variance performed on the cooperating teachers' scores on the three instruments. As can be seen, only one F-ratio attained the magnitude necessary for significance. The TIB evaluativeness scores resulted in a significant F-ratio of 4.09 for groups. Reference to Table 15 reveals that all mean scores decreased over the semester, with the intern cooperating teachers' mean score decreasing the most. This would tend to indicate a decreasing amount of the characteristic of evaluativeness (see pages 28 and 29).

Table 16

SUMMARY OF ANOVA
COOPERATING TEACHERS

Instrument	Source of Variation					
	Groups		Practice Teaching Format		Interaction Term	
	F-ratio	d.f.	F-ratio	d.f.	F-ratio	d.f.
MTAI	2.44	1,47	1.54	2,47	1.57	2,47
C-Scores	0.97	1,47	1.47	2,47	0.12	2,47
S-Scores	0.37	1,47	0.33	2,47	0.21	2,47
I-Scores	0.25	1,47	1.28	2,47	0.50	2,47
A-Scores	1.24	1,47	3.04	2,47	2.32	2,47
V-Scores	0.41	1,47	0.47	2,47	1.45	2,47
T-Scores	0.00	1,47	1.42	2,47	2.24	2,47
C & V-Scores	1.24	1,47	1.06	2,47	0.31	2,47
T,S,A, & I-Scores	0.38	1,47	1.35	2,47	1.28	2,47
TIB						
Cynicism Scores	3.13	1,47	1.68	2,47	0.64	2,47
Systems Scores	0.11	1,47	0.30	2,47	0.52	2,47
Evaluativeness Scores	4.09*	1,47	0.76	2,47	1.33	2,47
Openness Scores	0.80	1,47	0.16	2,47	2.21	2,47

*significant at the .05 level

$F_{.05}$ for 1 and 47 d.f. = 4.08

$F_{.05}$ for 2 and 47 d.f. = 3.23

Questionnaire Data

The contingency tables (Appendix F) yield significant Chi-square values on four items (see Table 17)--numbers 6, 14, 18, and 22. A scrutiny of the contingency table for item 6 reveals that cooperating teachers of student teachers were less apt to encourage practice teachers to criticize proposed lesson plans than were cooperating teachers of interns, and to some extent, cooperating teachers of micro-team practice teachers.

Table 17

CHI-SQUARE ANALYSIS OF QUESTIONNAIRE DATA
COOPERATING TEACHERS

Item Number	Chi-square Value		Item Number	Chi-square Value
1	4.352		21	7.450
2	4.178		22	15.738*
3	3.374		23	7.412
4	8.501		24	4.074
5	0.867		25	12.030
6	16.236*		26	6.509
7	5.649		27	9.130
8	7.459		28	6.558
9	6.159		29	6.091
10	4.372		30	6.470
11	8.875		31	10.397
12	10.748		32	6.614
13	3.485		33	4.400
14	16.756*		34	3.379
15	2.569		35	8.689
16	6.509		36	7.056
17	8.531		37	11.000
18	20.289		38	10.736
19	3.790		39	7.584
20	4.204		40	6.500

*significant at the .05 level

Chi-square for 8 d.f. at .05 level = 15.507

The response distribution for item 14 would seem to indicate that cooperating teachers of student teachers saw the practice teaching role as more of a tutoring role than did cooperating teachers of interns and micro-team teachers. Student teacher cooperating teachers seemed to encourage their practice teachers to work more with individual students and thus, perhaps, less with groups of students.

Item 18 would seem to reveal somewhat of a discrepancy between cooperating teachers' views and their practice teachers' views with regard to talking over discipline problems. Cooperating teachers of student teachers felt that there was good communication between them and their practice teachers--a view not nearly as strongly held by their practice teachers (see Appendix F). Cooperating teachers of interns and micro-team teachers, however, seemed to feel that insufficient communication on this problem occurred, while their practice teachers seemed to feel somewhat more positive about this aspect of their relationship.

A perusal of the contingency table for item 22 discloses much the same pattern as observed the first semester on this item--cooperating teachers of student teachers tended to encourage use of school records somewhat more than did cooperating teachers of interns and micro-team teachers. Again, just what significance this may have is not clearly revealed.

SUMMARY OF FINDINGS

Practice Teachers

MTAI. No changes were revealed either semester with the use of this instrument.

PHN. Although no significant changes were revealed the first semester, there were trends present which became increasingly visible the second semester and resulted in significant differences in the following dimensions:

> Strength of Will and Rationality. "people have control over their own outcomes and ... understand the motives behind their behavior" (Wrightsman, 1967, p. 12). The scores yielded significant F-ratios for both main effects (groups and student teaching format) as well as for the interaction term. As reference to Table 11 describes, the micro-

team teachers showed a large drop (13.65 points), whereas, the interns went up slightly, and the student teachers dropped slightly. The first semester data, as reported in Table 3, shows the same drop in micro-team mean scores, with the interns and student teachers going up slightly. The same direction of scores for the micro-team teachers would seem to add validity to the probable presence of a factor in the environment which contributed to this condition.

Positivism. (The sum of T,S,A, & I, or a general favorableness of human nature score.) The scores yielded a significant F-ratio on main effect due to groups. As Table 11 revealed, all groups mean scores dropped, with the micro-teams dropping most dramatically by far (38 points), compared with two points for the student teachers and three points for the interns. The first semester the same drop was evident, although not significant, in micro-team scores, whereas, student teachers and interns improved their mean scores the first semester. Again, consistency of the trend in the micro-team scores would lend validity to the data.

TIB. The results on this instrument over the two semesters do not show consistent trends. The two dimensions which show significant changes are as follows:

Evaluativeness. ("The extent to which an individual makes judgments." Harvey, 1971). The first semester's significant F-ratio on the TIB evaluativeness on the practice teaching format is not consistent with the second semester results. In the first semester all groups dropped significantly in their scores; whereas, in the second semester the micro-teams went up slightly. Consequently, on the basis of this inconsistency, it is doubtful where any valid conclusions could be drawn.

Openness. (" ... tolerance of ideas which run counter to one's own deeply held beliefs." Harvey, 1971). In the first semester the significant F-ratio occurred on the practice teaching format factor, whereas, in the second semester the significant F-ratio occurred in the main effect due to groups. An examination of the mean scores in Tables 3 and 11 indicates that, whereas, the micro-team scores indicated a fairly high degree of openness, the interns' scores consistently increased over the semester's experience. The mean scores, however, were always higher for micro-team teachers and interns than for student teachers; and the highest post-test scores of the interns were never higher than those of the micro-teams.

Cooperating Teachers

MTAI. No changes were revealed for either semester with the use of this instrument.

PHN. No changes were revealed for either semester with the use of this instrument.

TIB. This instrument was the only one to reveal any significant difference, and only in the dimension on evaluativeness (" ... good-bad, right-wrong, to avoid issues. A highly evaluative person would be one who sees a large number of wrongs in the world and bothers rarely to mention what's right" Harvey, 1971). The practice teaching format yielded significance during the first semester, whereas, during the second semester the main effect of groups produced the significance. The micro-team cooperating teachers, in this characteristic, were less apt to be dogmatic. The micro-team cooperating teachers' pre and post-test scores were lower than either of the other two groups of cooperating teachers. This trend was also evident the second semester, although not yielding a significant F-ratio due to the practice teaching format. Again, this lends validity to the findings.

Chapter 5

LIMITATIONS, CONCLUSIONS, AND IMPLICATIONS

LIMITATIONS

Perhaps at this juncture it would be well to point out to the reader that certain limitations existed in the inception and execution of this study (more explicitly, the internal design factors and the external environmental factors). There were at least three visible design factors which may have had an effect upon the findings of this study which we, as the experimenters, did not sufficiently control. The first factor dealt with the time differential. During the first semester the pre-test testing program was not completed until the practice teachers had been in the field for approximately three weeks; whereas, during the second semester, the testing was completed before the practice teachers went to their teaching stations. The second factor dealt with the insufficiency of validation of the Practice Teaching Inventory prior to its use in this study. On the basis of face validity the instrument appeared worthy; however, concurrent validity and reliability studies were not performed. Time was not available for use of the instrument prior to the study. The danger of using this instrument on cooperating teachers who would have participated in the study, in order to insure its validity, could have produced practice effect phenomena. The final factor dealt with replication. Test data during the second semester replication were gathered only on cooperating teachers who were not part of the first semester's investigation. The rationale for this decision was concern for the practice effect which might have manifested itself if the same test were given to the same group of teachers over a time lapse of only fifteen weeks. The use, then, of the first semester data on the repeating cooperating teachers was based upon the assumption that the second semester experience of these cooperating teachers would be similar to their first semester's experiences. This assumption may or may not have been legitimate.

The five environmental factors which we recognized as possibly having some effect upon our findings were the following. First, it was, perhaps, overly optimistic to expect significant changes in a major personality dimension such as the self concept to occur in a semester. In similar studies reviewed in the literature measuring other personality dimensions such as openmindedness, dogmatism, self concept, etc., there appears to be additional evidence to substantiate the findings reported in this study. Kinard (1968), Watson (1964), and Castek (1970), in separate studies, found no overall positive significant difference in student teachers' attitudes after one semester of practice teaching. However, the organization of the practice teaching experience is one semester in length, over which the controls were external to this study, and consequently could not be altered by us. Second, the school system in which a majority of our practice teachers were involved, and to which all the micro-team teachers were assigned, underwent a change in its chief administrative officer. A new superintendent was hired at mid-year. Prior to this time the district operated with the assistant superintendent acting as the superintendent. With the coming of the new superintendent a series of studies and policy changes occurred within the district. Third, the building principal of the school in which the majority of the micro-team teachers were placed was involved in a school board dispute over his retention for the coming year because of health reasons. The plight of the principal, a man popular with both his staff and the practice teachers, may have had a depressant effect upon certain scores, i.e., PHN Positivism and Strength of Will and Rationality. Fourth, during the second semester a teacher militancy became visible within the district in which the majority of the practice teachers were placed (all the micro-team teachers were in this district). A strike threat was present throughout the second semester and resulted in a strike during the month of April. We feel this situation may have affected the practice teachers' Positivism and Evaluativeness scores. Furthermore, this would have been a selective effect because all the micro-team practice teachers were within this district, while less than half of each of the other two groups were in the district. In effect, we believe the practice teachers' scores may have been reflecting their cooperating teachers' expressed feelings and attitudes. Fifth, the employment forecast for graduating practice teachers during the second semester was exceedingly grim. These students, who enrolled four years ago with optimism about the availability of teaching positions, upon graduation were witnessing a totally different situation. Whereas, in the past there were many vacancies for each graduate, at the time of this study a trend in the opposite direction was beginning to take place. This may have resulted in somewhat less positive outlooks on life, i.e., TIB cynicism scores.

CONCLUSIONS

One of the unique aspects of this study is that it is a first attempt, based upon fixed criteria, to compare one type of practice teaching organization with another. Up to this time, for the most part, studies reported in the literature focused upon comparing practice teacher behavior within one form of practice teaching organization; e.g., The Effect of Student Teaching on the Attitudes of the Student Teacher (Jekel, 1966); A Study of Changes in Openness of Student Teachers During the Student Teaching Experience (Kinard, 1968); Comparison of Internship Programs (Shaplin and Powell, 1964); Comparison of Interns with Regular First Year Teachers (Haberman, 1965); etc. This study in its design succeeded in comparing three forms of practice teaching organization using instruments designed to evaluate practice teaching organizational effectiveness by measuring the changes in the extent of openmindedness and several dimensions of self concept of the practice teachers. These changes in self concept and openmindedness are the fixed criteria used to evaluate the three forms of practice teaching organization--student teaching, micro-team teaching, and interning. With this recapitulation of the purpose for this study and based upon the assumption that the classroom teacher with a more positive self concept and a more open mind to the examination of ideas contrary to his is a more successful teacher, and with the previously summarized findings and prior description of limitations, the following conclusions were made.

The results of this experiment failed to provide conclusive evidence that any one of the practice teaching formats was superior to the others in producing changes, within this time span, in the practice teacher's self concept. Although differential changes did occur due to practice teaching formats on some individual dimensions and sub-scores, no overall consistent pattern of changes occurred.

The second major conclusion of this study was that the micro-team teaching format and the intern format seemed to produce more openness in the practice teachers (i.e., a willingness to examine beliefs contrary to one's own basic beliefs) than did the student teaching environment. This is indicated not only by the results of the ANOVA analysis of the three psychological instruments, but also by the contingency tables of the response distributions on the Practice Teaching Inventory. The practice teachers in both the intern and micro-team environments indicated that they felt much freer than did the student teachers to examine critically their cooperating teachers' proposed lesson plans. The micro-team practice teachers, in addition to this, felt more free to discuss discipline problems with their cooperating teachers than did student teachers and interns. Additional findings dealing with cooperating teachers' responses to the Practice Teaching Inventory indicate that cooperating teachers of student teachers were less apt to encourage practice teachers to criticize their proposed lesson plans than were cooperating teachers of interns and to some extent cooperating teachers of micro-team practice teachers.

One additional finding of the study indicated that micro-team practice teachers, as well as interns, felt very positively about the time allocated for planning, while student teachers felt most rushed and had the least time to prepare lessons. Their respective cooperating teachers reported much the same feelings. It is encouraging to note that the micro-team practice teachers and cooperating teachers have expressed this feeling, since it was one of the unique characteristics of the plan as perceived by the designer (Altman, 1969, 1970).

IMPLICATIONS

It would appear to be relevant to this study to re-emphasize at this point that comparisons could be made most legitimately between the micro-team practice teachers and the student teacher practice teachers because of the homogeneity of student population from which they were drawn (see Appendix B); whereas, the interns were selected on the basis of higher academic achievement and personal interviews. Comparisons, therefore, between the interns and the other two groups may contain a built-in bias in favor of the interns. Keeping this in mind, we feel justified in making the implication that a significant difference would exist between the interns and micro-team teachers if both groups had been drawn from the same population, with the micro-team teachers showing more favorable changes. This not being the case, the micro-team practice teachers, nevertheless, showed up as well, and in some instances higher, than the interns, indicating a richer and more effective practice teaching environment. It would appear, therefore, from this study, that perhaps a re-examination of the intern teaching stations would be in order.

Another implication from this study is one which focuses upon the economy of use of available practice teaching stations. The micro-teams, with two practice teachers assigned to one cooperating teacher, require half the number of stations, enabling an institution such as Wisconsin State University--La Crosse to field its practice teaching program within close proximity to the university; thus saving supervisory travel time. This would offer some practical suggestions to teacher training institutions having a paucity of available practice teaching stations in close proximity to the campus due to either a multitude of institutions of higher learning concentrated in a small geographic area, or a sparse concentration of elementary and secondary schools in a large geographic region. It would also appear in order to suggest that colleges of education which are unable to participate in an intern program might consider the micro-team teaching organization as a satisfactory or superior alternative.

There also seems to be some indication that the schools in which the micro-teams and interns function have more open environments, as evidenced by the cooperating teachers' scores. This may suggest that further study be initiated to determine whether the presence of the micro-teams and/or interns creates a more open school environment.

Finally, the research methods and design used in this study may have use as a model for future research in comparing the effectiveness of other phases of teacher training programs with one another.

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GLOSSARY

Altruism. The extent of unselfishness, sincere sympathy, and concern for others. (Wrightsman, 1964, p. 744).

Belief System. A set of predispositions to perceive, feel toward and respond to ego-involving stimuli and events in a consistent way. (Harvey, BSE, p. 2).

Complexity of Human Nature. The extent to which people are perceived as being complex and hard to understand or simple and easy to understand. (Wrightsman, 1964, p. 744).

Cooperating Teacher. A regular teacher of school pupils who also directs the work of an undergraduate practice teacher in the same building. (This teacher may be, in the case of student teaching or micro-team teaching, directing the work of the practice teacher in the same classroom.)

Cynicism. An expression of distrust and a general feeling that nothing is worthwhile or matters. (Harvey, March 12, 1971). (See Appendix G).

Dogmatism. Certitude with the implication that the individual had some eternal truth. (Harvey, June 16, 1971). (See Appendix F).

Evaluativeness. The extent to which an individual makes judgments--good-bad, right-wrong--social issues. (A highly evaluative person would be one who sees a large number of wrongs in the world and bothers rarely to mention what's right.) (Harvey, 1971).

Independence. The extent to which a person can maintain his convictions in the face of society's pressure toward conformity. (Wrightsman, 1964, p. 744).

Internship. A type of undergraduate practice teaching in which the trainee may assume responsibility for from 2/5 to 1/2 of a full teaching load for the semester. The semester is identified as the school semester rather than as the university semester.

Micro-team Teaching. A type of undergraduate practice teaching which is a scaled down team teaching operation taking place in a single self-contained classroom with two practice teachers and one experienced teacher operating as a teaching team for one semester. The practice teachers follow the university calendar for the semester.

Openmindedness/Closedmindedness. The extent to which one is receptive to new ideas, reason, etc. The extent to which one is free from bias or prejudice. The more openminded the individual, the more receptive he is to new ideas. The more closedminded the individual, the less willing he is to points of view different from his own.

Openness. The extent to which an individual is tolerant to and receptive to some idea that runs counter to his own deeply held beliefs. ("High openness" would imply a willingness to examine ideologies counter to one's own beliefs.) (Harvey, 1971).

Practice Teaching. The name applied to extended types of undergraduate professional laboratory field experiences taken during either semester of the senior year in which the student teaches daily in a school to gain practical experiences under the direction of a cooperating teacher and a university supervisor, and for which the student receives undergraduate credit.

Practice Teaching Format. The specific type of organization in which practice teaching takes place--student teaching, interning, micro-team teaching.

School Organization Climate. The extent to which the permanent staff members, during instructional planning meetings, are willing to accept or listen to the ideas and opinions of the practice teachers.

Self Concept. Those attitudes and feelings a person holds about himself in terms of his adequacies and inadequacies; in terms of his values; and in terms of his desires.

Strength of Will and Rationality. The extent to which people understand the motives behind their behavior and the extent to which they have control over their outcomes. (Wrightsman, 1964, p. 744).

Student Teaching. A type of undergraduate practice teaching in which the student assumes increasing responsibility for directing the learning of a group or groups of learners over a semester. The trainee in the elementary school frequently does his student teaching in a self-contained classroom. The student follows the university calendar.

Supervisor. A regular college staff member who has as all or part of his assigned work load the supervision of the activities of the practice teachers.

Trustworthiness. The extent to which people are seen as moral, honest, and reliable. (Wrightsman, 1964, p. 744).

Variability in Human Nature. The extent of individual differences in basic nature, and the basic changeability in human nature. (Wrightsman, 1964, p. 744).

APPENDIX A

A DESCRIPTION OF
MICRO TEAM TEACHING
A NEW APPROACH TO TRAINING TEACHERS FOR TEAM TEACHING

MICRO TEAM TEACHING

A NEW APPROACH TO TRAINING TEACHERS FOR TEAM TEACHING

One of the most provocative developments in classroom organization during the past decade has been team teaching. From its rennaissance in 1957 at the Franklin School in Lexington, Massachusetts, the practice has diffused to all levels and kinds of schools.* Today public, private, and parochial schools are teaming at all levels--elementary, junior high, and senior high. Even nursery schools and college liberal arts and science departments have got into the act. In fact, there seems to be no level of schooling in which team teaching appears impractical or undesirable. On the drawing board more schools each year are being designed or remodeled for team teaching and if, as Robert Anderson of Harvard predicts, by 1980 over 50% of the public schools will have some type of team teaching, then there is an urgent need not only to train new teachers, but also to retrain experienced teachers in this operation.

Why the focus on teaming? What does team teaching attempt to accomplish which other forms of organization cannot? Perhaps nothing, but on the other hand, perhaps it is a better means for keeping the school's curriculum and instruction current. A cursory examination of the rationale behind teaming would suggest that there is, among other factors, increased urgency for teachers to be current, resulting from the number of new and more complex curriculums in the various disciplines, and from the increasing number of instructional innovations within the content areas. No longer is it reasonable to expect an elementary teacher to be current in curriculum and instruction in language arts, social studies, science, mathematics, reading, music, art, etc. Even professors of education specializing in elementary curriculum and instruction can no longer keep on top of all these changes. There is a gap between what we know about curriculum and instruction and what is going on in the schools. It seems, therefore, that team teaching might be one of the answers. Rather than expecting a teacher to be current in all areas, one might more reasonably expect, through teaming, to be current in one or two areas.

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*Prior to the inception of team teaching at Lexington, Massachusetts, there is historical evidence which indicates that teachers teamed; e.g., college football squads are directed by a team of line, back, and end coaches.

Along with the obvious consequence of increasing knowledge affecting the organization for instruction, there is also a greater demand by colleges of education for more field stations which reflect modern school organizational patterns. Today, among university student teaching directors there is a race for placement of student teachers in schools which have one or more of the following programs: team teaching, nongradedness, computer assisted instruction, modular scheduling, discovery centers, learning labs, etc. The situation has become so desperate that student teachers are frequently placed in schools one or two hundred miles from the university in order to get this type of training.

To alleviate this problem colleges of education have been experimenting with a variety of plans such as intern teaching, remote teacher training, correlated teacher education, clinical and tutorial programs, consortiums, colloquiums, etc. The idea of a micro team has been developed as another plan for training teachers in the use of newer curriculums and forms of instruction, while at the same time training them in the organization and operation of a teaching team. Through this plan teachers who are ready and willing can try out team teaching in their own classrooms without the need for the administration to reorganize a school or part of a school. Through the use of university personnel or anyone knowledgeable in the theory and practice of team teaching, experienced teachers can get started on team teaching prior to committing themselves to participation in a total school team teaching operation. In a typical situation it is possible for a micro team to operate in one classroom. As one teacher involved in the project has said: "The unique thing about this plan is that I can try out teaming without

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*The Wisconsin Improvement Program has utilized interns in teams throughout Wisconsin since 1959.

involving the other teachers on the floor."

Team teaching as an organizational design for cooperative planning, instruction, and evaluation is a highly complex process and has caused legitimate concern for many educators in the area of training teachers for it. Involvement of seventy or eighty children, itself, makes this a complex operation. Instructing a group of this size requires the development of plans which are able to stimulate and sustain a wide range of interests and abilities. In addition to dealing with larger numbers of children, the involvement of more teachers and the emphasis on a continuous examination of curriculum and instruction increase the complexity of the operation. Consequently, to consider plunging teachers into this organization without any readiness other than a few meetings or a summer workship is courting the development of mediocre team teaching organization. True, schools are teaming, but how successful are they? Are they real team teaching situations, or departmental operations taking place under the guise of team teaching? Are new curriculums and innovations in education diffusing into the classroom, or are the same old things being done by three or more teachers and still disaffecting kids?

Anyone who has visited schools engaged in team teaching has undoubtedly observed that there were many variations, among which we find some old staffing patterns now called team teaching. These arrangements identified as team teaching are frequently designed to make teaching more convenient for the teachers rather than more beneficial to the kids. These designs are characterized by "team strategies" which operate on the level of : "I'll work with the bright kids this year, you can work with the average ones, and let's have the new teacher work with the slow ones. It will be good experience for him;" or, "I'll teach your social studies if you'll teach my science;" or perhaps, "We can have all fourth grades view the science and social studies films together and then each of us can take a turn to work on records or reports." Perhaps the words are different, but the rationale is the same, and real purpose is camouflaged under the guise of team teaching. Unfortunately, in time, teachers and administrators in these situations either become discouraged because they realize they're not teaming, or they come to believe they have a team teaching organization when in practice they have only a departmental program, an ability grouping scheme, or audio-visual instruction for more than one classroom. To believe that team teaching is an administrative operation which is primarily a matter of reshuffling kids and schedules is a mistake!

To develop a plan to counteract from the start some of the misconceptions about team teaching, a group of local public school teachers, along with seniors majoring in elementary education at Wisconsin State University--La Crosse, have been learning about team organization. By placing two student teachers with one experienced teacher, a micro team teaching organization has been developed. The project, directed and coordinated by two staff members from the university, has been designed as a model for pre-service and in-service teacher training in team teaching. All of this is part of a university funded research project called Micro Team Teaching, designed to help teacher training institutions and school systems seduce experienced teachers into team teaching, as well as to prepare student teachers for teaming.

Micro team teaching, by involving fewer students and teachers, gives the experienced teacher a chance to gain experience in teaming in a climate which is compatible with his own rate of change. At this level the scheduling and grouping of kids and teachers can be minimized, and the more significant characteristics, (i.e., co-operative curriculum decision making, instructional planning, and evaluation) can be maximized. The team planning sessions reflect the most advanced type of operation; only it is carried out with three teachers for fewer students and is consequently less complex. The total operation has this rationale: minimization of complexity. In a sense it is like learning to drive a car--one first has the option of deciding whether he wants to learn to drive, and if he decides he does, then he starts on the side streets or country roads before he tries the busy throughfares at the rush hour. In essence, the micro team is a scaled down team teaching operation which emphasizes professional cooperation for instructing an aggregate of students. The description which follows illustrates this.

Each classroom teacher taking part in the plan is a volunteer. The student teachers are assigned to the teams. At the beginning of each semester the three members of the team--the two students and the experienced teacher--attend an orientation meeting conducted, in this case,by the university staff member, and/or building principal who coordinate the project. At this meeting the team members are briefed, through the use of video tapes and discussion, about the nature of team teaching--its organization and objectives. They are made aware of the dynamics of the planning operation. The importance of extensive planning is further dignified by providing the teachers with time to plan. It is explained that in addition to daily planning, each team will have one full morning per week from 8:00-12:00 to plan for the next week's instruction. A substitute teacher, usually the same person each time, will be hired to take over during that time.* The team will then be free for an uninterrupted planning session.

The planning operation generally consists of two phases: (1) making broad decisions about what to teach, and (2) designing drafts about how to teach. At these sessions the team decides upon the general objectives for units of work for the following week, or, as in social studies or science, for some time in the near future. Generally this decision making operation is kicked off by a barnstorming session in which all kinds of objectives are listed, examined, and possibly discarded. Those selected are usually those most relevant to the times, to the abilities and interests of the children, to the notions appearing in the literature about curriculum design, and to the capabilities of the team. In an academic discipline such as science or social studies, this may eat up a couple of hours or an entire Friday morning. In this plan there are no team leaders. If at the onset the team members feel inadequate to make decisions about objectives for a content area, one team member usually is appealed to by the other members to quarterback the unit and to do some adult reading on the topic, and at a later date report his findings back to the team. If this be the case, the curriculum operation in this subject area becomes tabled for a later time and another area is taken up for decision making. In either case, curriculum objectives generally have top priority in the planning session.

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*In this system there were not sufficient numbers of periods for planning sessions. Where special teachers are in a building and teach classes, this planning session might take place when the specials are teaching.

A rather interesting example of this operation occurred when one of the fourth grade teams was developing a science unit aimed toward explaining the concept of energy. The teachers found in examining the children's textbooks that they went overboard in their descriptions of wind and water as examples of energy, but ignored nuclear energy. The team decided that alghough much of this was interesting, it wasn't relevant to the here and now. What should be emphasized, they decided, was nuclear energy. Even without depth of knowledge in this field, these teachers felt they could develop some general understandings which were more relevant to the times. In another situation a fifth grade team planned that the study of modern America should emphasize social inequalities rather than survey a multitude of generalizations about the subject matter. Historical, economic, and physical characteristics were examined to explain, in part, these present social conditions.

While the development of curriculum objectives led the teams to an examination of curriculum issues, the development of instructional plans focused upon instructional innovations. Once the curriculum objectives have been determined, the teams direct their energy to decisions about how best to bring the learners and the objectives together. Again the teams barnstorm for ideas, imagining all possible alternatives for instruction. The emphasis here is:"What teaching tools can we invent to facilitate learning? How should we introduce this? How can we teach this creatively?" Once the search for ideas is cooled, a skeletal framework for instruction develops. At this point each member of the team accepts the responsibility for some part of the instruction; that is, assumes responsibility for putting the ingredients into a proper mix. This entails deciding cooperatively how the content should be introduced, what activities should be engaged in by the learner, what materials and equipment are needed, and how the instruction should be evaluated. The execution of these collective decisions is usually left to the individual team members responsible for the particular aspect of the lesson.

In a planning session such as the one just described, it frequently happens that the decisions made about what and how to teach will direct classroom instruction in a particular area for a period of weeks. Consequently, subsequent Friday planning sessions will focus upon this operation only incidentally--in terms of progress being made. The team then centers its attention upon other areas of planning. Thus, science might be discussed in depth only once in a month or six weeks, and discussed only incidentally during the interim when the major focus is in other areas. It is in this area of planning that micro teams need the most help from someone outside the teams who is continuously challenging the team to utilize more complex curriculum objectives. In the micro teams, Bloom's and Krathwohl's taxonomies of educational objectives in the cognitive and affective domains were the instruments used to upgrade the curriculum decision making.

With decision making about curriculum and instruction completed in the major area of emphasis for that week, the time that remains is spent either in blocking out in general terms the schedule for the week, or in examining problems of individual children. Here the teachers bring to bear all their knowledge in identifying, and offering suggestions for remediating, learning difficulties. They also evaluate lessons previously taught in terms of their observable effects upon the whole class and individuals within the class.

The planning decisions resulting from these sessions are made operational in the classroom. Some of these decisions are highly visible, while others are less perceptible. To the casual visitor looking in on a micro team for a few minutes, it could appear that what he was witnessing was a self-contained classroom of twenty-five to thirty-five children with three teachers--one teacher to ten or so children. Or perhaps it would appear as if some school of education was getting pretty hard up for student teaching stations and was now assigning two student teachers to a critic teacher. However, after watching these people for an hour or two, he would begin to notice subtle differences between this situation and the conventional student teaching programs. Probably one observable difference would be that the three teachers frequently helped one another teach. The teacher identified as the cooperating teacher might be seen assisting rather than directing the other teachers. He would also notice the large group, small group, and individual instruction that seem to be part of the scheme. The unique aspect of the small group instruction is that the team teachers are teaching in small groups not only in reading and arithmetic, but also in science, language arts, and social studies as well. These kids are being grouped not only on the basis of ability, but also on the basis of interests and personality characteristics. Another difference observed by the visitor would be the amount of time the teachers seem to have during the school day to plan and study individually, because inherent in the program when a teacher isn't teaching, assisting, or observing is the feeling that he is free to leave the classroom. Outside the classroom these teachers can be observed reading journals, bulletins, pupil records, or studying subject matter in the teachers' lounge. Curriculum study, instructional planning, and pupil evaluation with another team member can also be observed when the teachers aren't in contact with children. At any rate, the teachers seem to be using school time, a lot of it, to do school work other than actual teaching. It soon becomes apparent to the visitor that these teachers are being weaned from the notion that the hallmark of a good elementary teacher is measured by the number of hours of contact with kids.

The following case illustrates the micro team instructional operation. In one fourth grade, to teach the structural characteristics of rhyming, free verse, and Haiku poetry, the team arranged the children in three small groups. Each teacher taught one of the types of poetry to each of the small groups. The plans called for each teacher, every fifteen minutes, to move to another corner of the room and instruct another group. This was developed as a teach-reteach type of lesson in which corrections to the previous instruction could be made when working with the next group. In subsequent lessons they worked with these groups and achieved almost total participation from the groups in writing poems in each of the three forms. To culminate this series of small group instruction, each of the team teachers selected a poem about trees and read it to the class--one in Haiku, one in free verse, and one in rhyming--each giving it "all they got." What happened? The children, in discussing the poems, were able not only to distinguish among the different forms of poetry, but also to explain in depth their own feelings about their preferences for a particular poetic form. This type of instruction reflected the considerable amount of cooperative planning which took place prior to instruction.

The teachers' evaluation of the lesson was informal and centered upon such questions as: "What made the lesson click?" "What follow-up can we have?" "What needs to be retaught?" "What percentage of kids tuned us out?" "Why?" "How can we get to them?" Questions like these are asked over and over again during the mid-morning break, a pre-afternoon session, or a free moment.

Although the teams essentially do their own planning, an advisor from the university attends their planning meetings to assist the teams. University advisors assist the teams in bringing to them new insights about curriculum and instruction, particularly in the area of audio-visual materials and teaching techniques. The building principal also works with the teams and is particularly helpful in destroying the myth that teachers couldn't engineer the curriculum to meet the needs of their classes because, "They (the building principal) wouldn't let us."

One of the dimensions of the teaming operation which cannot be ignored is the human relations aspect of the micro teams. At the onset it is made clear to the cooperating teachers and student teachers that they are to perceive themselves as equals. If the plan is to succeed, it didn't seem possible to engage in this operation if the cooperating teachers didn't treat the students with the same respect and courtesy that they would treat other teachers in their building who might be teaming with them. As they wouldn't make unreasonable demands of their colleagues, they were advised not to do so with these students. The student teachers are also expected to carry their share of the load and make decisions based upon their prior teaching. They needed to restructure their own self image. It appears from observations that the experienced teachers are better able to adjust to this mode of behavior than are the student teachers. The student teachers having been treated as students for so long, find it difficult at first to accept or adjust to a position of equality. However, once this occurs, usually after a month, the student teacher perceives himself as a teacher and no longer merely as playing the role of teacher. From that point on, heightened communications develop and dynamic teaming takes place.

The children taught by the teams show considerable enthusiasm for the program. Why shouldn't they? In this plan they are being fed on a highly nutritive diet of stimulating lessons which are carefully planned and evaluated. One of the boys made the following comment to his teacher about this type of instruction: "I never knew school could be like this! Why, I'd even be willing to go on Saturdays." Many of the teams found it was hard to get the kids to go home at the end of the day. There does seem to be some carryover among the students. Present teachers of pupils who were previously engaged in this project have told us that these children display considerable accomplishments in their independent study habits and in their positive attitudes about schooling.

As the team operation is examined over a period of time, and as more experienced teachers become involved in the program, there appear to be several directions toward which the program can go--not only in its obvious potential for developing team teachers, but also as a less demanding way to induct student teachers into those areas in which the field experiences of student teaching is beyond the readiness of most student teachers; i.e., the urban ghettos. Perhaps micro teams in an inner city classroom would minimize the frustration experienced by student teachers put into these highly complex situations. It would be most interesting to try!

What the direction of this particular operation will be remains to be seen. It seems there are still many unanswered questions about micro teaming. Does the program give the teacher better preparation for teaching in the self-contained classroom as well as in the team oriented organization? Does team planning tend to focus more upon subject matter than upon the learner, and, if so, is that good or bad? Can a school system develop micro teams without university sponsorship? (I believe so.) What spin-offs can be expected from this type of operation? (Already we're beginning to see the possibility of this plan for training clinical professors, as well as for structuring a highly sophisticated in-service program). Will full blown team teaching in a building result, in time, from this type of operation, and if so, will the teachers be better prepared to engage in this type of operation as a result of their experience? At this time, one thing is evident, however, as a result of this teaming operation: the teachers are not content to go back to their previous form of teaching; nor are they content with textbook teaching or outmoded curriculums. As one of the teachers who was involved in this project said: "I'll never be the same, and I'm glad!"

APPENDIX B

CHARACTERISTICS OF THE ELEMENTARY PRACTICE TEACHING PROGRAMS AT WISCONSIN STATE UNIVERSITY--LA CROSSE

APPENDIX B

CHARACTERISTICS OF THE ELEMENTARY PRACTICE TEACHING PROGRAMS AT WISCONSIN STATE UNIVERSITY--LA CROSSE

Student Teaching*	Interning*	Micro-team*
1. Student teacher-cooperating teacher are organized on a one to one basis in a self-contained classroom.	Student teacher-co-operating teacher ratio can vary from a one teacher to one intern ratio to a team of six teachers and three interns.	Two student teachers & one cooperating teacher are organized on a two to one basis in a self-contained classroom. This organization may vary to four student teachers & two cooperating teachers.
2. Team teaching may or may not be part of this design	Team teaching may or may not be part of this design.	Team teaching is part of this design.
3. Admission requirements. a. overall grade point average of 2.35. b. must have senior standing. c. must have completed junior year professional education requirements. d. recommendation by elementary education department.	Admission requirements: a. overall grade point average of 2.75. b. must have completed at least 100 of 128 semester hours prior to interning. c. must have completed all course work in professional education. d. favorable recommendation from the office of Dean of Men or Women concerning personality attributes.	Admission requirements: a. overall grade point average of 2.35. b. must have senior standing. c. must have completed junior year professional education requirements. d. recommendation by elementary education department.

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*See bibliography: Wisconsin State University--La Crosse, 1968, 1970; Schmidt, no date given; and Altman, 1969, 1970.

APPENDIX B (cont.)

Student Teaching	Interning	Micro-team
e. screened by the chairman of the department.	e. screened by a committee selected by the Teacher Education Council before a final selection is made.	e. screened by the chairman of the department.
f. statement from the University Health Service attesting to acceptable physical condition.	f. statement from the University Health Service attesting to acceptable physical condition.	f. statement from the University Health Service attesting to acceptable physical condition.
g. no special license required.	g. must obtain an Intern License issued by the Superintendent of Public Instruction.	g. no special license required.
h. no interview prior to student teaching.	h. may or may not be interviewed by the local school administrators. (They must concur with appointment or adjustment will be made before appointment is final.	h. no interview prior to student teaching.
i. must attend special orientation meeting with co-operating teachers, supervisory teachers and building principals.	i. must attend a summer orientation session held in Madison. (This is a requirement for both fall & spring interns.)	i. must attend special orientation meeting with co-operating teachers, supervisory teachers and building principals.
j. no contract required with the school district.	j. must sign an internship contract with the school district to which assigned.	j. no contract required with the school district.
4. Attendance at school orientation meetings prior to assumption of teaching duties in the fall varies from school to school.	Attendance at school orientation meetings prior to the assumption of teaching duties is required.	Attendance at school orientation meetings prior to assumption of teaching duties in the fall varies from school to school.

APPENDIX B (cont.)

Student Teaching	Interning	Micro-team
5. Not considered full time employees by district to which assigned; however, have same professional responsibilities to local school authorities as do regular members of the staff.	Considered full time employees and have same responsibilities to local school authorities as do regular members of the staff.	Not considered full time employees by district to which assigned; however, have same professional responsibilities to local school authorities as do regular members of the staff.
6. Spend one semester in cooperating school following university calendar.	Spend one semester in cooperating school following local school calendar.	Spend one semester in cooperating school following university calendar.
7. No indication of percentage of teaching duties.	Teaching duties should not exceed 40-50% of a regular teaching responsibility.	No indication of percentage of teaching duties.
8. Instructional planning sessions are arranged by the co-operating teacher & the student teacher which take place either before or after school or when a special teacher takes over.	Instructional planning sessions are provided for as part of the team teaching organization.	Weekly planning sessions of four hours during the school day are provided. These planning sessions are in addition to those which may take place before or after school or when a special teacher takes over.
9. Receive no stipend.	Paid $1500 per semester of service	Receive no stipend.
10. Receive ten semester hours credit.	Receive ten semester hours credit.	Receive ten semester hours credit.

APPENDIX C

INSTRUMENTS

C-1 "THIS I BELIEVE" TEST (TIB)

C-2 PHILOSOPHIES OF HUMAN NATURE SCALE (PHN)

C-3 MINNESOTA TEACHER ATTITUDE INVENTORY (MTAI)

C-4 PRACTICE TEACHING INVENTORY

APPENDIX C-1

"THIS I BELIEVE" TEST*

OPINION SURVEY

Name______________________________ Date______________________________

School____________________________ Position (check two)

___ Student

Grade Level_______________________

___ Student Teacher

Sex ______Male or Female______
(circle one)

___ Micro-team Teacher

___ Intern

___ Cooperating Teacher working with:

    ___ Student Teacher

    ___ Micro-team Teacher

    ___ Intern

INSTRUCTIONS

In the following pages you will be asked to write your opinions or beliefs about several topics. Please write at least three (3) sentences about each topic. You will be timed on each topic at a pace that will make it necessary for you to work rapidly.

Be sure to write what you genuinely believe.

You must write on the topics in the order of their appearance. Wait to turn each page until the person in charge gives the signal. And once you have turned a page, do NOT turn back to it.

PLEASE FO NOT OPEN THIS BOOKLET UNTIL YOU ARE INSTRUCTED TO BEGIN.

---

*The general information section, the instructions, and each of the topics to follow appears on a separate half sheet of paper.

This I believe about innovations in teaching.

This I believe about the American way of life.

This I believe about science.

This I believe about hippies.

This I believe about religion.

This I believe about friendship.

This I believe about discipline.

This I believe about people.

This I believe about civil disobedience.

APPENDIX C-2

PHILOSOPHIES OF HUMAN NATURE SCALE (PHN)

This questionnaire is a series of attitude statements. Each represents a commonly held opinion and there are no right or wrong answers. You will probably disagree with some items and agree with others. We are interested in the extent to which you agree or disagree with matters of opinion.

Read each statement carefully. Then, on the separate answer sheet, indicate the extent to which you agree or disagree by blocking in the corresponding space on the answer sheet with a No. 2 pencil. Mark as long as the pair of lines, and completely fill the area between the pair of lines. If you change your mind, erase your first mark COMPLETELY. The numbers and their meanings are indicated below:

If you agree strongly -circle +3

If you agree somewhat -circle +2

If you agree slightly -circle +1

If you disagree slightly -circle -1

If you disagree somewhat -circle -2

If you disagree strongly -circle -3

First impressions are usually best in such matters. Read each statement, decide if you agree or disagree and the strength of your opinion. Be sure to answer every statement.

If you find that the numbers to be used in answering do not adequately indicate your own opinion, use the one which is closest to the way you feel.

PHN Scale

1. Great successes in life, like great artists and inventors, are usually motivated by forces they are unaware of.

2. Most students will tell the instructor when he has made a mistake in adding up their score, even if he had given them more points than they deserved.

3. Most people will change the opinion they express as a result of an onslaught of criticism, even though they really don't change the way they feel.

4. Most people try to apply the Golden Rule even in today's complex society.

5. A person's reaction to things differs from one situation to another.

6. I find that my first impression of a person is usually correct.

7. Our success in life is pretty much determined by forces outside our own control.

8. If you give the average person a job to do and leave him to do it, he will finish it successfully.

9. Nowadays many people won't make a move until they find out what other people think.

10. Most people do not hesitate to go out of their way to help someone in trouble.

11. Different people react to the same situation in different ways.

12. People can be described accurately by one term, such as "introverted," or "moral," or "sociable."

13. Attempts to understand ourselves are usually futile.

14. People usually tell the truth, even when they know they would be better off by lying.

15. The important thing in being successful nowadays is not how hard you work, but how well you fit in with the crowd.

16. Most people will act as "Good Samaritans" if given the opportunity.

17. Each person's personality is different from the personality of every other person.

18. It's not hard to understand what really is important to a person.

19. There's little one can do to alter his fate in life.

20. Most students do not cheat when taking an exam.

21. The typical student will cheat on a test when everybody else does, even though he has a set of ethical standards.

22. "Do unto others as you would have them do unto you" is a motto most people follow.

23. People are quite different in their basic interests.

24. I think I get a good idea of a person's basic nature after a brief conversation with him.

25. Most people have little influence over the things that happen to them.

26. Most people are basically honest.

27. It's a rare person who will go against the crowd.

28. The typical person is sincerely concerned about the problems of others.

29. People are pretty different from one another in what "makes them tick."

30. If I could ask a person three questions about himself (and assuming he would answer them honestly), I would know a great deal about him.

31. Most people have an unrealistically favorable view of their own capabilities.

32. If you act in good faith with people, almost all of them will reciprocate with fairness towards you.

33. Most people have to rely on someone else to make their important decisions for them.

34. Most people with a fallout shelter would let their neighbors stay in it during a nuclear attack.

35. Often a person's basic personality is altered by such things as a religious conversion, psychotherapy, or a charm course.

36. When I meet a person, I look for one basic characteristic through which I try to understand him.

37. Most people vote for a political candidate on the basis of unimportant characteristics such as his appearance or name, rather than because of his stand on the issues.

38. Most people lead clean, decent lives.

39. The average person will rarely express his opinion in a group when he sees the others disagree with him.

40. Most people would stop and help a person whose car is disabled.

41. People are unpredictable in how they'll act from one situation to another.

42. Give me a few facts about a person and I'll have a good idea of whether I'll like him or not.

43. If a person tries hard enough, he will usually reach his goals in life.

44. People claim they have ethical standards regarding honesty and morality, but few people stick to them when the chips are down.

45. Most people have the courage of their convictions.

46. The average person is conceited.

47. People are pretty much alike in their basic interests.

48. I find that my first impressions of people are frequently wrong.

49. The average person has an accurate understanding of the reasons for his behavior.

50. If you want people to do a job right, you should explain things to them in great detail and supervise them closely.

51. Most people can make their own decisions, uninfluenced by public opinion.

52. It's only a rare person who would risk his own life and limb to help someone else.

53. People are basically similar in their personalities.

54. Some people are too complicated for me to figure out.

55. If people try hard enough, wars can be prevented in the future.

56. If most people could get into a movie without paying and be sure they were not seen, they would do it.

57. It is achievement, rather than popularity with others, that gets you ahead nowadays.

58. It's pathetic to see an unselfish person in today's world because so many people take advantage of him.

59. If you have a good idea about how several people will react to a certain situation, you can expect most people to react the same way.

60. I think you can never really understand the feelings of other people.

61. The average person is largely the master of his own fate.

62. Most people are not really honest for a desirable reason; they're afraid of getting caught.

63. The average person will stick to his opinion if he thinks he's right, even if others disagree.

64. People pretend to care more about one another than they really do.

65. Most people are consistent from situation to situation in the way they react to things.

66. You can't accurately describe a person in just a few words.

67. In a local or national election, most people select a candidate rationally and logically.

68. Most people would tell a lie if they could gain by it.

69. If a student does not believe in cheating, he will avoid it even if he sees many others doing it.

70. Most people inwardly dislike putting themselves out to help other people.

71. A child who is popular will be popular as an adult, too.

72. You can't classify everyone as good or bad.

73. Most persons have a lot of control over what happens to them in life.

74. Most people would cheat on their income tax if they had a chance.

75. The person with novel ideas is respected in our society.

76. Most people exaggerate their troubles in order to get sympathy.

77. If I can see how a person reacts to one situation, I have a good idea of how he will react to other situations.

78. People are too complex to ever be understood fully.

79. Most people have a good idea of what their strengths and weaknesses are.

80. Nowadays people commit a lot of crimes and sins that no one else ever hears about.

81. Most people will speak out for their own good.

82. People are usually out for their own good.

83. When you get right down to it, people are quite alike in their emotional makeup.

84. People are so complex, it is hard to know what "makes them tick."

APPENDIX C-3

MINNESOTA TEACHER ATTITUDE INVENTORY (MTAI)

The Minnesota Teacher Attitude Inventory is not included in this appendix. The following quotation is from page 2 of the 1968 test catalog of the Psychological Corporation:

> Tests and other publications of THE PSYCHOLOGICAL CORPORATION are copyrighted and may not be reproduced in any form of printing or by any other means, electronic or mechanical (including, but not limited to, photocopying, audiovisual recording and transmission, and portrayal or duplication in any information storage and retrieval system) without permission in writing from the publisher.

and further:

> Test copies may not be bound without special permission in theses or reports placed in libraries, or generally circulated, or accessible to the public.

Readers wishing to examine the MTAI are advised to contact THE PSYCHOLOGICAL CORPORATION, 304 East 45th Street, New York, New York, 10017 for specimen sets of this instrument.

APPENDIX C-4

PRACTICE TEACHING INVENTORY
(Practice Teacher)

B. E. Altman

Wisconsin State University--La Crosse

DIRECTIONS

This questionnaire consists of a series of statements regarding the type of practice teaching experience you had. Each question represents a general activity and is designed to measure the extent to which you engaged in this type of activity. There are no right or wrong answers.

Read each statement separately; then, on the separate answer sheet, indicate the extent to which you experienced the activity by blocking in the corresponding space on the answer sheet with a number two pencil. Mark as long as the pair of lines, and completely fill the area between the pair of lines. If you change your mind, erase your first mark completely. The numbers and their meanings are indicated below.

If your answer is ALWAYS	-block in 5.
If your answer is ALMOST ALWAYS	-block in 4.
If your answer is USUALLY	-block in 3.
If your answer is OCCASIONALLY	-block in 2.
If your answer is NEVER	-block in 1.

(Practice Teacher)

1. I felt free to develop my own techniques for teaching any lesson.

2. I had time during the school day to do some planning for instruction.

3. I found that the teaching resources of the school--films, filmstrips, tapes, tape recorders, etc.--were available to me on the same basis as to other teachers.

4. I was encouraged by the cooperating teacher to make referrals to the special teachers in the district for obtaining special help for children with special problems.

5. During instruction I felt I had sufficient supervision from the cooperating teacher.

6. During the planning sessions I felt encouraged to criticize my cooperating teacher's proposed lesson plans for the following day or week.

7. I was encouraged by the cooperating teacher to call in the parents of children who were having problems.

8. In addition to supervision from the cooperating teacher, I felt I got sufficient help in evaluating my lessons from the university supervisor.

9. When the need arose, I felt free to make on the spot decisions about instruction.

10. I had time during the day to develop techniques for evaluating lessons.

11. After teaching a lesson I felt I received constructive criticism of the lesson taught from the cooperating teacher or other members of the team.

12. I felt free to develop my own approach to introducing a lesson.

13. The children's achievement was cooperatively evaluated during the planning sessions.

14. I was encouraged to give special help to those children whom I thought needed it.

15. I had time during the school day to develop instructional materials.

16. Making decisions about what to teach was shared cooperatively by the cooperating teacher and myself or others on the team.

17. I was expected to share with the cooperating teacher or other members on the team my evaluations of what I taught.

(Practice Teacher)

18. I felt free to talk over discipline problems with the cooperating teacher or other members of my team.

19. During the planning sessions I was able to express my own opinions about what should be taught.

20. The tests used for evaluating learning were cooperatively developed.

21. The cooperating teacher or other members of the team and I shared in making decisions about the physical arrangement of the classroom.

22. I was encouraged to use the school records to learn about individual children's backgrounds.

23. I had sufficient time to plan with my cooperating teacher or other members of my team.

24. I was encouraged to try out the instructional innovations that I developed.

25. The cooperating teacher talked over his discipline problems with me or other members of the team.

26. The cooperating teacher and I discussed the findings of our unit tests.

27. After the first few weeks the cooperating teacher let me make my own decisions concerning classroom management.

28. During a teaching demonstration such as in science, I felt I could count on the cooperating teacher to assist me in the lesson.

29. The building principal gave me support in dealing with discipline problems.

30. In a planning session the cooperating teacher encouraged me to express my opinions about what to teach.

31. Teacher made materials were shared by the cooperating teacher(s) and myself.

32. Together the cooperating teacher and I evaluated what we taught.

33. The tests given the children were cooperatively developed by the cooperating teacher or members of the team and me.

34. The university staff member gave me help in dealing with discipline problems.

(Practice Teacher)

35. I felt that the cooperating teacher encouraged me to express my opinions about what to evaluate.

36. The amount of time allocated for weekly and daily planning sessions was adequate.

37. During the planning sessions I felt on an equal professional status with the cooperating teacher and other members of the team. I didn't feel I was being treated as a student.

38. During the planning sessions I felt there was a free and informal atmosphere for the exchange of ideas about what to teach and how to teach.

39. In addition to evaluating my own lessons I was encouraged to evaluate my cooperating teacher's lessons.

40. I found I was treated by other teachers in the building with the same respect and dignity as other staff members.

APPENDIX C-4

PRACTICE TEACHING INVENTORY
(Cooperating Teacher)

B. E. Altman

Wisconsin State University--La Crosse

DIRECTIONS

This questionnaire consists of a series of statements regarding the type of practice teaching experience you administered. Each question represents a general activity and is designed to measure the extent to which you engaged in this type of activity. There are no right or wrong answers.

Read each statement separately; then, on the separate answer sheet, indicate the extent to which you experienced the activity by blocking in the corresponding space on the answer sheet with a number two pencil. Mark as long as the pair of lines, and completely fill the area between the pair of lines. If you change your mind, erase your first mark completely. The numbers and their meanings are indicated below:

If your answer is ALWAYS -block in 5.
If your answer is ALMOST ALWAYS -block in 4.
If your answer is USUALLY -block in 3.
If your answer is OCCASIONALLY -block in 2.
If your answer is NEVER -block in 1.

(Cooperating Teacher)

1. The practice teacher was made to feel free to develop her own techniques for teaching any lesson.

2. The practice teacher had some time during the day to do some planning for instruction.

3. The teaching resources of the school--films, film strips, tapes, tape recorders, etc.--were available to the practice teacher on the same basis as to other teachers.

4. I encouraged the practice teacher to make referrals to the special teachers in the district for obtaining special help for children with special problems.

5. During instruction I felt I gave the practice teacher sufficient supervision.

6. During the planning sessions I encouraged the practice teacher to criticize my proposed lesson plans for the following day or week.

7. I encouraged the practice teacher to call in the parents of children who were having problems.

8. In addition to my supervision, I felt the practice teacher got sufficient help in evaluating his lessons from the university supervisor.

9. When the need arose, the practice teacher felt free to make on the spot decisions about instruction.

10. The practice teacher was given time during the day to develop techniques for evaluating lessons.

11. I felt that the practice teacher, after teaching a lesson, received constructive criticism of the lesson taught, either from me or from other members of the team.

12. The practice teacher was free to develop his own approach to teaching a lesson.

13. The children's achievement was cooperatively evaluated during the planning sessions.

14. The practice teacher was encouraged to give special help to those children whom he thought needed it.

15. The practice teacher had time during the school day to develop instructional material.

16. Making decisions about what to teach was shared cooperatively by the practice teacher and myself or other members of the team.

(Cooperating Teacher)

17. The practice teacher talked over his discipline problems with me or other members of the team.

19. During the planning sessions, I encouraged the practice teachers to express their own opinions about what should be taught.

20. The tests used for evaluating learning were cooperatively developed.

21. The practice teacher or other members of the team and I shared in making decisions about the physical arrangement of the classroom.

22. I encouraged the practice teacher to use school records to learn about individual children's backgrounds.

23. There was sufficient time to plan with the practice teacher or other members of the team.

24. The practice teacher was encouraged to try out the instructional innovations he had developed.

25. I talked over my discipline problems with the practice teacher or other members of the team.

26. The practice teacher and I discussed the findings of our unit tests.

27. After the first few weeks I let the practice teacher make his own decisions concerning classroom management.

28. During a teaching demonstration such as in science, I encouraged the practice teacher to let me assist her in the lesson.

29. The building principal gave the practice teacher support in dealing with discipline problems.

30. In a planning session I encouraged the practice teacher to express his opinions about what to teach.

31. Teacher made materials were shared by the practice teacher and me.

32. Together the practice teacher and I evaluated what we taught.

33. The tests given the children were cooperatively developed by the practice teacher or members of the team and me.

34. The university staff member offered the practice teacher suggestions in dealing with discipline problems.

35. The practice teacher was encouraged to express his opinions about what to evaluate.

(Cooperating Teacher)

36. The amount of time allocated for weekly and daily planning was adequate.

37. During the planning sessions I tried to make the practice teacher feel we were on an equal professional status. He was not treated as a student.

38. During the planning sessions I felt there was a free and informal atmosphere for the exchange of ideas about what to teach and how to teach.

39. I encouraged the practice teachers to evaluate my lessons.

40. I found the other teachers in the building treated the practice teachers with the same respect and dignity as they treated other staff members.

APPENDIX D

COPY OF LETTER SENT TO SUBJECTS OF THE STUDY

APPENDIX D

WISCONSIN STATE UNIVERSITY
La Crosse, Wisconsin

Dear

A government funded research project is currently underway to evaluate the effectiveness of different types of practice teaching (student teaching, micro-team teaching, and interning). This project, started last September, necessitated the gathering of data at the beginning and close of the semester from cooperating teachers and practice teachers.

Now that we are at the close of the first semester, we are once again asking a sample of cooperating teachers and practice teachers to answer some questions designed for completing the project. We are asking to participate only those people who have not previously answered these questionnaires.

Since the questionnaire must be administered by someone on the project, we are not permitted to include copies of it with this letter. Therefore, we have set up the following dates and places for administering the questionnaire forms:

Tuesday, January 12	4:15-5:30 P.M.	219 Main Hall
Wednesday, January 13	4:15-5:30 P.M.	219 Main Hall

If it is not possible for you to come on either of the above dates, contact me (785-1800, Ext. 256) and a special time will be arranged. All persons contacted must fill out the questionnaire.

Cordially,

Burton E. Altman
Professor of Education
Wisconsin State University
La Crosse, Wisconsin 54601

BEA:nl

APPENDIX E

TESTING PROCEDURES

APPENDIX E

Directions for administering the PHN, Opinion Survey, and the Minnesota Teacher Attitude Inventory:

The sequence for administering the tests is as follows:

Test I - PHN:

A. No time limit
B. Use #2 pencils
C. Fill out information date on IBM scoring sheet
D. Respondents are to answer all the questions.
E. Read directions on the cover sheet to them. Do not attempt to interpret any questions for the respondent. If the respondent should ask the examiner to explain the meaning of a specific item, the examiner should simply say that the subject's interpretation of the items is an important factor in the Inventory and that he should, therefore, answer the items according to his own understanding of them.
F. Collect tests and IBM answer sheets.

Test II - Opinion Survey:

A. Fill out data on the cover sheet identifying whether the respondent is a practice teacher or cooperating teacher.
B. Read to the respondents the instructions.
C. This is a timed test.
D. Say, "Turn to Page 3" --give them 5 seconds to read the statement. Say, "Write your opinion." Give them 60 seconds to answer the statement. At the end of 60 seconds, say, "Turn to Page 4" and give them 5 seconds to read the statement. Say, "Write your opinion." Repeat this operation until they finish the last question on Page 11.
E. This test must be timed carefully.

Test III - Minnesota Teacher Attitude Inventory:

A. No time limit.
B. Fill out the data on the top of the page. In place of college and class, have the respondent indicate whether he is a cooperating teacher or practice teacher.
C. Follow the directions given on page 5 of the manual.

APPENDIX F

CHI-SQUARE CONTINGENCY TABLES

APPENDIX F--SEMESTER I

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    COOPERATING TEACHERS                    STUDENT TEACHERS

QUESTION NUMBER 1                       QUESTION NUMBER 1

   1   2   3   4   5                       1   2   3   4   5
......................                  ......................
1  0.  0.  3.  6.  1.   CHI-            1  0.  1.  2.  2.  7.   CHI-
......................                  ......................
2  0.  0.  0.  1.  2.   SQUARE          2  0.  0.  1.  1. 10.   SQUARE
......................                  ......................
3  0.  0.  1.  2.  2.   4.456           3  0.  0.  0.  2.  3.   5.115
......................                  ......................
      ERROR 1                                 ERROR 1

QUESTION NUMBER 2                       QUESTION NUMBER 2

   1   2   3   4   5                       1   2   3   4   5
......................                  ......................
1  0.  0.  0.  7.  3.   CHI-            1  2.  2.  1.  3.  4.   CHI-
......................                  ......................
2  0.  0.  0.  1.  2.   SQUARE          2  0.  1.  0.  5.  6.   SQUARE
......................                  ......................
3  0.  0.  0.  0.  5.   6.795           3  0.  1.  0.  2.  2.   5.663
......................                  ......................
      ERROR 1                                 ERROR 1

QUESTION NUMBER 3                       QUESTION NUMBER 3

   1   2   3   4   5                       1   2   3   4   5
......................                  ......................
1  0.  0.  1.  0.  9.   CHI-            1  0.  0.  1.  1. 10.   CHI-
......................                  ......................
2  0.  0.  0.  0.  3.   SQUARE          2  1.  0.  0.  0. 11.   SQUARE
......................                  ......................
3  0.  0.  0.  0.  5.   0.847           3  0.  0.  0.  0.  5.   4.368
......................                  ......................
      ERROR 1                                 ERROR 1

QUESTION NUMBER 4                       QUESTION NUMBER 4

   1   2   3   4   5                       1   2   3   4   5
......................                  ......................
1  3.  6.  1.  0.  0.   CHI-            1  8.  2.  0.  0.  2.   CHI-
......................                  ......................
2  1.  2.  0.  0.  0.   SQUARE          2  6.  2.  1.  1.  2.   SQUARE
......................                  ......................
3  1.  1.  2.  0.  1.   6.426           3  1.  1.  1.  0.  2.   6.138
......................                  ......................
      ERROR 1                                 ERROR 1
```

COOPERATING TEACHERS

```
QUESTION NUMBER 5
      1   2   3   4   5
.........................
1    0.  0.  0.  5.  5.   CHI-
.........................
2    0.  0.  0.  2.  1.   SQUARE
.........................
3    0.  1.  1.  2.  1.    6.266
.........................
        ERROR 1
```

```
QUESTION NUMBER 6
      1   2   3   4   5
.........................
1    2.  5.  1.  2.  0.   CHI-
.........................
2    0.  1.  2.  0.  0.   SQUARE
.........................
3    2.  1.  0.  1.  1.   10.999
.........................
        ERROR 1
```

```
QUESTION NUMBER 7
      1   2   3   4   5
.........................
1    5.  1.  3.  0.  1.   CHI-
.........................
2    3.  0.  0.  0.  0.   SQUARE
.........................
3    0.  0.  2.  1.  2.   11.294
.........................
        ERROR 1
```

```
QUESTION NUMBER 8
      1   2   3   4   5
.........................
1    2.  3.  2.  3.  0.   CHI-
.........................
2    0.  3.  0.  0.  0.   SQUARE
.........................
3    1.  4.  0.  0.  0.    7.379
.........................
        ERROR 1
```

STUDENT TEACHERS

```
QUESTION NUMBER 5
      1   2   3   4   5
.........................
1    0.  0.  1.  3.  8.   CHI-
.........................
2    1.  2.  1.  4.  4.   SQUARE
.........................
3    0.  1.  1.  1.  2.    5.860
.........................
        ERROR 1
```

```
QUESTION NUMBER 6
      1   2   3   4   5
.........................
1    3.  3.  4.  0.  2.   CHI-
.........................
2    0.  0.  5.  1.  6.   SQUARE
.........................
3    0.  0.  2.  1.  2.   12.711
.........................
        ERROR 1
```

```
QUESTION NUMBER 7
      1   2   3   4   5
.........................
1   11.  0.  0.  1.  0.   CHI-
.........................
2    7.  1.  1.  1.  2.   SQUARE
.........................
3    1.  1.  1.  0.  2.   11.778
.........................
        ERROR 1
```

```
QUESTION NUMBER 8
      1   2   3   4   5
.........................
1    5.  1.  2.  1.  3.   CHI-
.........................
2    2.  6.  4.  0.  0.   SQUARE
.........................
3    0.  2.  1.  1.  1.   12.254
.........................
        ERROR 1
      COOPERATING TEACHERS                      STUDENT TEACHERS

QUESTION NUMBER 9                        QUESTION NUMBER 9
       1   2   3   4   5                        1   2   3   4   5
........................                 ........................
1   0.  0.  1.  4.  5.   CHI-            1   1.  0.  0.  2.  9.   CHI-
........................                 ........................
2   0.  0.  0.  1.  2.   SQUARE          2   0.  0.  1.  3.  8.   SQUARE
........................                 ........................
3   0.  0.  1.  2.  2.   0.995           3   0.  0.  0.  1.  4.   3.141
........................                 ........................
         ERROR 1                                  ERROR 1

QUESTION NUMBER 10                       QUESTION NUMBER 10
       1   2   3   4   5                        1   2   3   4   5
........................                 ........................
1   0.  3.  3.  4.  0.   CHI-            1   4.  0.  4.  1.  3.   CHI-
........................                 ........................
2   0.  0.  2.  1.  0.   SQUARE          2   0.  2.  1.  5.  4.   SQUARE
........................                 ........................
3   0.  0.  4.  0.  1.   8.826           3   0.  1.  2.  1.  1.   13.087
........................                 ........................
         ERROR 1                                  ERROR 1

QUESTION NUMBER 11                       QUESTION NUMBER 11
       1   2   3   4   5                        1   2   3   4   5
........................                 ........................
1   0.  1.  2.  5.  2.   CHI-            1   0.  2.  3.  2.  5.   CHI-
........................                 ........................
2   0.  0.  2.  1.  0.   SQUARE          2   2.  3.  3.  2.  2.   SQUARE
........................                 ........................
3   0.  1.  1.  1.  2.   4.859           3   0.  2.  2.  1.  0.   7.011
........................                 ........................
         ERROR 1                                  ERROR 1

QUESTION NUMBER 12                       QUESTION NUMBER 12
       1   2   3   4   5                        1   2   3   4   5
........................                 ........................
1   0.  0.  1.  6.  3.   CHI-            1   1.  1.  0.  1.  9.   CHI-
........................                 ........................
2   0.  0.  0.  0.  3.   SQUARE          2   0.  0.  0.  2. 10.   SQUARE
........................                 ........................
3   0.  0.  2.  1.  2.   7.746           3   0.  0.  0.  0.  5.   4.128
........................                 ........................
         ERROR 1                                  ERROR 1
```

COOPERATING TEACHERS

QUESTION NUMBER 13

	1	2	3	4	5	
1	0.	0.	3.	4.	3.	CHI-
2	0.	0.	1.	1.	1.	SQUARE
3	0.	1.	1.	2.	1.	2.948

ERROR 1

QUESTION NUMBER 14

	1	2	3	4	5	
1	0.	0.	1.	1.	8.	CHI-
2	0.	0.	1.	1.	1.	SQUARE
3	0.	0.	0.	3.	2.	6.267

ERROR 1

QUESTION NUMBER 15

	1	2	3	4	5	
1	0.	1.	2.	6.	1.	CHI-
2	0.	0.	1.	1.	1.	SQUARE
3	0.	0.	0.	3.	2.	4.069

ERROR 1

QUESTION NUMBER 16

	1	2	3	4	5	
1	0.	0.	2.	3.	5.	CHI-
2	0.	0.	0.	0.	3.	SQUARE
3	0.	0.	0.	0.	5.	5.538

ERROR 1

STUDENT TEACHERS

QUESTION NUMBER 13

	1	2	3	4	5	
1	0.	4.	2.	2.	4.	CHI-
2	0.	0.	2.	2.	8.	SQUARE
3	0.	0.	1.	0.	4.	8.409

ERROR 1

QUESTION NUMBER 14

	1	2	3	4	5	
1	0.	1.	2.	3.	6.	CHI-
2	1.	0.	2.	1.	8.	SQUARE
3	0.	1.	0.	0.	4.	6.981

ERROR 1

QUESTION NUMBER 15

	1	2	3	4	5	
1	2.	1.	3.	2.	4.	CHI-
2	0.	1.	2.	5.	4.	SQUARE
3	0.	2.	1.	0.	2.	9.109

ERROR 1

QUESTION NUMBER 16

	1	2	3	4	5	
1	0.	1.	0.	4.	7.	CHI-
2	0.	1.	0.	2.	9.	SQUARE
3	0.	1.	1.	2.	1.	8.107

ERROR 1

COOPERATING TEACHERS

```
QUESTION NUMBER 17
       1  2  3  4  5
.........................
1   0.  0.  1.  5.  4.    CHI-
.........................
2   0.  0.  2.  0.  1.    SQUARE
.........................
3   0.  0.  2.  2.  1.    4.925
.........................
        ERROR 1
```

```
QUESTION NUMBER 18
       1  2  3  4  5
.........................
1   0.  0.  1.  3.  6.    CHI-
.........................
2   0.  0.  2.  1.  0.    SQUARE
.........................
3   0.  0.  0.  2.  3.    7.499
.........................
        ERROR 1
```

```
QUESTION NUMBER 19
       1  2  3  4  5
.........................
1   0.  0.  1.  4.  5.    CHI-
.........................
2   0.  0.  0.  1.  2.    SQUARE
.........................
3   0.  0.  1.  1.  3.    1.240
.........................
        ERROR 1
```

```
QUESTION NUMBER 20
       1  2  3  4  5
.........................
1   0.  1.  4.  4.  1.    CHI-
.........................
2   0.  0.  0.  2.  1.    SQUARE
.........................
3   0.  2.  3.  0.  0.    8.842
.........................
        ERROR 1
```

STUDENT TEACHERS

```
QUESTION NUMBER 17
       1  2  3  4  5
.........................
1   0.  1.  3.  4.  4.    CHI-
.........................
2   1.  6.  1.  1.  3.    SQUARE
.........................
3   0.  0.  3.  0.  2.    14.607
.........................
        ERROR 1
```

```
QUESTION NUMBER 18
       1  2  3  4  5
.........................
1   0.  0.  1.  1. 10.    CHI-
.........................
2   1.  0.  0.  1. 10.    SQUARE
.........................
3   0.  0.  0.  1.  4.    3.383
.........................
        ERROR 1
```

```
QUESTION NUMBER 19
       1  2  3  4  5
.........................
1   0.  1.  1.  4.  6.    CHI-
.........................
2   1.  0.  0.  1. 10.    SQUARE
.........................
3   0.  0.  1.  0.  4.    9.231
.........................
        ERROR 1
```

```
QUESTION NUMBER 20
       1  2  3  4  5
.........................
1   3.  1.  2.  2.  4.    CHI-
.........................
2   1.  5.  2.  3.  1.    SQUARE
.........................
3   1.  1.  0.  1.  2.    7.017
.........................
        ERROR 1
```

COOPERATING TEACHERS

```
QUESTION NUMBER 21
      1   2   3   4   5
.........................
1    1.  0.  1.  4.  4.    CHI-
.........................
2    0.  0.  0.  0.  3.    SQUARE
.........................
3    0.  0.  0.  2.  3.     4.319
.........................
        ERROR 1
```

```
QUESTION NUMBER 22
      1   2   3   4   5
.........................
1    0.  0.  0.  0. 10.    CHI-
.........................
2    0.  0.  0.  2.  1.    SQUARE
.........................
3    0.  0.  2.  3.  0.    17.389
.........................
        ERROR 1
```

```
QUESTION NUMBER 23
      1   2   3   4   5
.........................
1    3.  2.  4.  1.  0.    CHI-
.........................
2    0.  0.  0.  1.  2.    SQUARE
.........................
3    1.  3.  0.  0.  1.    15.169
.........................
        ERROR 1
```

```
QUESTION NUMBER 24
      1   2   3   4   5
.........................
1    0.  0.  1.  4.  5.    CHI-
.........................
2    0.  0.  0.  1.  2.    SQUARE
.........................
3    0.  0.  0.  4.  1.     3.141
.........................
        ERROR 1
```

STUDENT TEACHERS

```
QUESTION NUMBER 21
      1   2   3   4   5
.........................
1    0.  4.  0.  2.  6.    CHI-
.........................
2    0.  0.  2.  5.  5.    SQUARE
.........................
3    0.  0.  1.  1.  3.     9.565
.........................
        ERROR 1
```

```
QUESTION NUMBER 22
      1   2   3   4   5
.........................
1    1.  0.  1.  3.  7.    CHI-
.........................
2    1.  2.  1.  3.  5.    SQUARE
.........................
3    0.  0.  1.  0.  4.     6.021
.........................
        ERROR 1
```

```
QUESTION NUMBER 23
      1   2   3   4   5
.........................
1    0.  3.  2.  1.  6.    CHI-
.........................
2    0.  0.  2.  3.  7.    SQUARE
.........................
3    0.  2.  1.  2.  0.     8.712
.........................
        ERROR 1
```

```
QUESTION NUMBER 24
      1   2   3   4   5
.........................
1    0.  1.  1.  0. 10.    CHI-
.........................
2    0.  0.  1.  3.  8.    SQUARE
.........................
3    0.  0.  0.  2.  3.     6.182
.........................
        ERROR 1
      COOPERATING TEACHERS                        STUDENT TEACHERS

QUESTION NUMBER 25                          QUESTION NUMBER 25
       1    2    3    4    5                       1    2    3    4    5
...........................                 ...........................
1    0.   0.   1.   4.   5.    CHI-         1    0.   0.   2.   2.   8.    CHI-
...........................                 ...........................
2    0.   0.   1.   2.   0.    SQUARE       2    0.   4.   0.   5.   2.    SQUARE
...........................                 ...........................
3    0.   0.   1.   3.   1.     3.366       3    0.   0.   0.   2.   3.    13.592
...........................                 ...........................
           ERROR 1                                     ERROR 1

QUESTION NUMBER 26                          QUESTION NUMBER 26
       1    2    3    4    5                       1    2    3    4    5
...........................                 ...........................
1    0.   0.   2.   3.   5.    CHI-         1    1.   1.   2.   2.   6.    CHI-
...........................                 ...........................
2    0.   0.   0.   3.   0.    SQUARE       2    1.   1.   3.   4.   2.    SQUARE
...........................                 ...........................
3    0.   0.   3.   0.   2.    10.105       3    0.   0.   1.   1.   3.     4.281
...........................                 ...........................
           ERROR 1                                     ERROR 1

QUESTION NUMBER 27                          QUESTION NUMBER 27
       1    2    3    4    5                       1    2    3    4    5
...........................                 ...........................
1    0.   1.   2.   5.   2.    CHI-         1    0.   1.   1.   2.   8.    CHI-
...........................                 ...........................
2    0.   0.   2.   0.   1.    SQUARE       2    0.   1.   9.   3.   8.    SQUARE
...........................                 ...........................
3    0.   1.   1.   2.   1.     4.345       3    0.   0.   0.   1.   4.     2.142
...........................                 ...........................
           ERROR 1                                     ERROR 1

QUESTION NUMBER 28                          QUESTION NUMBER 28
       1    2    3    4    5                       1    2    3    4    5
...........................                 ...........................
1    1.   2.   3.   2.   2.    CHI-         1    1.   1.   0.   1.   9.    CHI-
...........................                 ...........................
2    1.   0.   1.   1.   0.    SQUARE       2    0.   0.   1.   4.   7.    SQUARE
...........................                 ...........................
3    1.   1.   2.   0.   1.     3.499       3    0.   0.   1.   0.   4.     8.506
...........................                 ...........................
           ERROR 1                                     ERROR 1
      COOPERATING TEACHERS                     STUDENT TEACHERS

QUESTION NUMBER 29                     QUESTION NUMBER 29
     1   2   3   4   5                      1   2   3   4   5
........................               ........................
1   0.  0.  1.  1.  8.   CHI-          1   3.  0.  0.  2.  7.   CHI-
........................               ........................
2   0.  0.  0.  1.  2.   SQUARE        2   1.  0.  0.  0. 11.   SQUARE
........................               ........................
3   2.  0.  0.  2.  1.    9.531        3   1.  0.  0.  1.  3.    4.198
........................               ........................
         ERROR 1                                ERROR 1

QUESTION NUMBER 30                     QUESTION NUMBER 31
     1   2   3   4   5                      1   2   3   4   5
........................               ........................
1   0.  0.  0.  2.  8.   CHI-          1   0.  1.  1.  0. 10.   CHI-
........................               ........................
2   0.  0.  0.  1.  2.   SQUARE        2   1.  0.  0.  1. 10.   SQUARE
........................               ........................
3   0.  1.  1.  2.  1.    7.701        3   0.  0.  1.  1.  3.    7.334
........................               ........................
         ERROR 1                                ERROR 1

QUESTION NUMBER 31                     QUESTION NUMBER 31
     1   2   3   4   5                      1   2   3   4   5
........................               ........................
1   0.  0.  2.  1.  7.   CHI-          1   0.  1.  0.  1.  9.   CHI-
........................               ........................
2   0.  0.  0.  1.  2.   SQUARE        2   1.  1.  2.  1.  7.   SQUARE
........................               ........................
3   0.  0.  0.  3.  2.    5.149        3   0.  1.  1.  0.  3.    4.765
........................               ........................
         ERROR 1                                ERROR 1

QUESTION NUMBER 32                     QUESTION NUMBER 32
     1   2   3   4   5                      1   2   3   4   5
........................               ........................
1   0.  0.  1.  4.  5.   CHI-          1   0.  1.  3.  0.  7.   CHI-
........................               ........................
2   0.  0.  1.  1.  1.   SQUARE        2   1.  5.  3.  2.  1.   SQUARE
........................               ........................
3   0.  0.  2.  2.  1.    2.378        3   1.  0.  1.  0.  3.   13.985
........................               ........................
         ERROR 1                                ERROR 1
```

COOPERATING TEACHERS

QUESTION NUMBER 33

	1	2	3	4	5	
1	0.	0.	4.	5.	0.	CHI-
2	0.	0.	1.	2.	0.	SQUARE
3	1.	1.	0.	2.	1.	9.654

ERROR 1

QUESTION NUMBER 34

	1	2	3	4	5	
1	4.	1.	3.	1.	1.	CHI-
2	1.	1.	1.	0.	0.	SQUARE
3	2.	1.	2.	0.	0.	2.528

ERROR 1

QUESTION NUMBER 35

	1	2	3	4	5	
1	0.	0.	4.	5.	1.	CHI-
2	0.	0.	2.	0.	1.	SQUARE
3	0.	1.	2.	1.	1.	5.899

ERROR 1

QUESTION NUMBER 36

	1	2	3	4	5	
1	3.	1.	5.	1.	0.	CHI-
2	0.	0.	0.	2.	1.	SQUARE
3	2.	2.	0.	0.	1.	15.919

ERROR 1

STUDENT TEACHERS

QUESTION NUMBER 33

	1	2	3	4	5	
1	3.	2.	1.	1.	5.	CHI-
2	2.	2.	4.	2.	2.	SQUARE
3	2.	0.	2.	1.	0.	7.301

ERROR 1

QUESTION NUMBER 34

	1	2	3	4	5	
1	6.	2.	3.	0.	1.	CHI-
2	5.	4.	2.	1.	0.	SQUARE
3	2.	1.	1.	1.	0.	4.585

ERROR 1

QUESTION NUMBER 35

	1	2	3	4	5	
1	0.	1.	2.	2.	7.	CHI-
2	0.	0.	4.	4.	4.	SQUARE
3	0.	0.	1.	0.	4.	5.864

ERROR 1

QUESTION NUMBER 36

	1	2	3	4	5	
1	3.	2.	1.	3.	3.	CHI-
2	0.	1.	0.	5.	6.	SQUARE
3	1.	1.	1.	0.	2.	8.732

ERROR 1

```
    COOPERATING TEACHERS                      STUDENT TEACHERS


QUESTION NUMBER 37                        QUESTION NUMBER 37
      1   2   3   4   5                         1   2   3   4   5
........................                  ........................
1   0.  0.  1.  1.  8.    CHI-            1   1.  0.  1.  1.  9.    CHI-
........................                  ........................
2   0.  0.  0.  0.  3.    SQUARE          2   0.  0.  0.  6.  6.    SQUARE
........................                  ........................
3   0.  0.  0.  2.  3.     3.599          3   0.  0.  0.  1.  4.     7.501
........................                  ........................
         ERROR 1                                   ERROR 1


QUESTION NUMBER 38                        QUESTION NUMBER 38
      1   2   3   4   5                         1   2   3   4   5
........................                  ........................
1   0.  0.  0.  1.  9.    CHI-            1   1.  0.  2.  1.  8.    CHI-
........................                  ........................
2   0.  0.  0.  2.  1.    SQUARE          2   1.  0.  1.  0. 10.    SQUARE
........................                  ........................
3   0.  0.  0.  2.  3.     4.209          3   0.  0.  0.  1.  4.     3.786
........................                  ........................
         ERROR 1                                   ERROR 1


QUESTION NUMBER 39                        QUESTION NUMBER 39
      1   2   3   4   5                         1   2   3   4   5
........................                  ........................
1   0.  2.  4.  3.  1.    CHI-            1   4.  1.  3.  1.  3.    CHI-
........................                  ........................
2   0.  1.  2.  0.  0.    SQUARE          2   3.  4.  2.  1.  1.    SQUARE
........................                  ........................
3   0.  1.  1.  2.  1.     3.077          3   0.  2.  1.  0.  2.     6.184
........................                  ........................
         ERROR 1                                   ERROR 1


QUESTION NUMBER 40                        QUESTION NUMBER 40
      1   2   3   4   5                         1   2   3   4   5
........................                  ........................
1   0.  0.  0.  4.  6.    CHI-            1   1.  1.  0.  1.  8.    CHI-
........................                  ........................
2   0.  0.  1.  1.  1.    SQUARE          2   1.  1.  0.  2.  7.    SQUARE
........................                  ........................
3   0.  0.  0.  1.  4.     6.072          3   0.  0.  0.  1.  4.     1.472
........................                  ........................
         ERROR 1                                   ERROR 1
```

APPENDIX F--SEMESTER II

COOPERATING TEACHERS

```
QUESTION NUMBER 1
      1    2    3    4    5
..........................
1     1.   1.   4.   7.   4.    CHI-
..........................
2     0.   0.   0.   1.   2.    SQUARE
..........................
3     0.   0.   1.   1.   0.     4.352
..........................
       ERROR 1

QUESTION NUMBER 2
      1    2    3    4    5
..........................
1     1.   1.   3.   7.   5.    CHI-
..........................
2     0.   0.   0.   1.   2.    SQUARE
..........................
3     0.   0.   1.   0.   1.     4.178
..........................
       ERROR 1

QUESTION NUMBER 3
      1    2    3    4    5
..........................
1     2.   0.   1.   1.  13.    CHI-
..........................
2     0.   0.   0.   0.   3.    SQUARE
..........................
3     1.   0.   0.   0.   1.     3.374
..........................
       ERROR 1

QUESTION NUMBER 4
      1    2    3    4    5
..........................
1     5.   6.   3.   2.   1.    CHI-
..........................
2     1.   2.   0.   0.   0.    SQUARE
..........................
3     0.   0.   1.   0.   1.     8.501
..........................
       ERROR 1
```

STUDENT TEACHERS

```
QUESTION NUMBER 1
      1    2    3    4    5
..........................
1     1.   2.   5.   4.   4.    CHI-
..........................
2     0.   1.   2.   2.   4.    SQUARE
..........................
3     0.   1.   0.   1.   2.     3.532
..........................
       ERROR 1

QUESTION NUMBER 2
      1    2    3    4    5
..........................
1     0.   6.   6.   3.   1.    CHI-
..........................
2     1.   2.   2.   2.   2.    SQUARE
..........................
3     0.   0.   0.   3.   1.    11.051
..........................
       ERROR 1

QUESTION NUMBER 3
      1    2    3    4    5
..........................
1     1.   0.   1.   1.  14.    CHI-
..........................
2     0.   0.   0.   2.   7.    SQUARE
..........................
3     0.   0.   0.   0.   4.     3.730
..........................
       ERROR 1

QUESTION NUMBER 4
      1    2    3    4    5
..........................
1    11.   3.   1.   1.   1.    CHI-
..........................
2     6.   1.   2.   0.   0.    SQUARE
..........................
3     2.   0.   1.   0.   1.     5.983
..........................
       ERROR 1
```

```
     COOPERATING TEACHERS                   STUDENT TEACHERS

QUESTION NUMBER 5                      QUESTION NUMBER 5
.....1...2...3...4...5..               .....1...2...3...4...5..
1    0.  2.  0.  8.  7.   CHI-         1    1.  2.  3.  4.  7.   CHI-
........................               ........................
2    0.  0.  0.  2.  1.   SQUARE       2    0.  1.  2.  3.  3.   SQUARE
........................               ........................
3    0.  0.  0.  1.  1.    0.867       3    0.  1.  1.  1.  1.    1.843
........................               ........................
          ERROR 1                                ERROR 1

QUESTION NUMBER 6                      QUESTION NUMBER 6
.....1...2...3...4...5..               .....1...2...3...4...5..
1    5.  8.  1.  2.  1.   CHI-         1   10.  4.  1.  0.  2.   CHI-
........................               ........................
2    0.  1.  2.  0.  0.   SQUARE       2    0.  4.  0.  2.  3.   SQUARE
........................               ........................
3    0.  0.  0.  1.  1.   16.236       3    1.  0.  1.  2.  0.   19.798
........................               ........................
          ERROR 1                                ERROR 1

QUESTION NUMBER 7                      QUESTION NUMBER 7
.....1...2...3...4...5..               .....1...2...3...4...5..
1   10.  0.  5.  0.  2.   CHI-         1   12.  2.  3.  0.  0.   CHI-
........................               ........................
2    3.  0.  0.  0.  0.   SQUARE       2    6.  2.  0.  1.  0.   SQUARE
........................               ........................
3    0.  0.  1.  0.  1.    5.649       3    2.  1.  1.  0.  0.    4.963
........................               ........................
          ERROR 1                                ERROR 1

QUESTION NUMBER 8                      QUESTION NUMBER 8
.....1...2...3...4...5..               .....1...2...3...4...5..
1    2.  5.  4.  3.  3.   CHI-         1    5.  5.  2.  3.  2.   CHI-
........................               ........................
2    0.  3.  0.  0.  0.   SQUARE       2    0.  4.  1.  2.  2.   SQUARE
........................               ........................
3    0.  1.  0.  0.  1.    7.459       3    0.  2.  2.  0.  0.    9.429
........................               ........................
          ERROR 1                                ERROR 1
```

```
      COOPERATING TEACHERS                     STUDENT TEACHERS

QUESTION NUMBER 9                        QUESTION NUMBER 9
      1    2    3    4    5                    1    2    3    4    5
..........................               ..........................
1     2.   1.   1.   2.  11.   CHI-      1     1.   2.   1.   9.   4.   CHI-
..........................               ..........................
2     0.   0.   0.   1.   2.   SQUARE    2     0.   0.   1.   4.   4.   SQUARE
..........................               ..........................
3     1.   0.   0.   1.   0.    6.159    3     0.   0.   1.   0.   3.    8.143
..........................               ..........................
         ERROR 1                                  ERROR 1


QUESTION NUMBER 10                       QUESTION NUMBER 10
      1    2    3    4    5                    1    2    3    4    5
..........................               ..........................
1     0.   3.   4.   5.   4.   CHI-      1     2.   9.   4.   1.   1.   CHI-
..........................               ..........................
2     0.   0.   2.   1.   0.   SQUARE    2     1.   2.   4.   2.   0.   SQUARE
..........................               ..........................
3     0.   0.   1.   0.   1.    4.372    3     0.   1.   0.   3.   0.   12.839
..........................               ..........................
         ERROR 1                                  ERROR 1


QUESTION NUMBER 11                       QUESTION NUMBER 11
      1    2    3    4    5                    1    2    3    4    5
..........................               ..........................
1     0.   2.   1.   8.   6.   CHI-      1     2.   3.   8.   2.   2.   CHI-
..........................               ..........................
2     0.   0.   2.   1.   0.   SQUARE    2     0.   2.   3.   4.   0.   SQUARE
..........................               ..........................
3     0.   0.   1.   1.   0.    8.875    3     0.   2.   1.   1.   0.    7.753
..........................               ..........................
         ERROR 1                                  ERROR 1


QUESTION NUMBER 12                       QUESTION NUMBER 12
      1    2    3    4    5                    1    2    3    4    5
..........................               ..........................
1     1.   1.   2.   8.   5.   CHI-      1     2.   3.   2.   5.   5.   CHI-
..........................               ..........................
2     0.   0.   0.   0.   3.   SQUARE    2     0.   1.   1.   2.   5.   SQUARE
..........................               ..........................
3     1.   0.   0.   1.   0.   10.748    3     0.   1.   0.   0.   3.    5.540
..........................               ..........................
         ERROR 1                                  ERROR 1
```

```
    COOPERATING TEACHERS                      STUDENT TEACHERS

QUESTION NUMBER 13                        QUESTION NUMBER 13
      1   2   3   4   5                         1   2   3   4   5
.........................                 .........................
1    0.  1.  6.  6.  4.    CHI-           1    3.  6.  3.  2.  3.    CHI-
.........................                 .........................
2    0.  0.  1.  1.  1.    SQUARE         2    1.  1.  4.  1.  2.    SQUARE
.........................                 .........................
3    0.  0.  2.  0.  0.     3.485         3    0.  1.  1.  1.  1.     4.281
.........................                 .........................
          ERROR 1                                   ERROR 1

QUESTION NUMBER 14                        QUESTION NUMBER 14
      1   2   3   4   5                         1   2   3   4   5
.........................                 .........................
1    1.  2.  0.  1. 13.    CHI-           1    3.  2.  0.  6.  6.    CHI-
.........................                 .........................
2    0.  0.  1.  1.  1.    SQUARE         2    0.  3.  2.  1.  3.    SQUARE
.........................                 .........................
3    1.  0.  0.  1.  0.    16.756         3    0.  1.  1.  0.  2.    10.446
.........................                 .........................
          ERROR 1                                   ERROR 1

QUESTION NUMBER 15                        QUESTION NUMBER 15
      1   2   3   4   5                         1   2   3   4   5
.........................                 .........................
1    1.  2.  3.  7.  4.    CHI-           1    2.  6.  6.  2.  1.    CHI-
.........................                 .........................
2    0.  0.  1.  1.  1.    SQUARE         2    2.  0.  4.  3.  0.    SQUARE
.........................                 .........................
3    0.  0.  1.  1.  0.     2.569         3    0.  0.  3.  1.  0.     9.059
.........................                 .........................
          ERROR 1                                   ERROR 1

QUESTION NUMBER 16                        QUESTION NUMBER 16
      1   2   3   4   5                         1   2   3   4   5
.........................                 .........................
1    0.  2.  1.  7.  7.    CHI-           1    0.  4.  4.  7.  2.    CHI-
.........................                 .........................
2    0.  0.  0.  0.  3.    SQUARE         2    0.  1.  1.  4.  3.    SQUARE
.........................                 .........................
3    0.  1.  0.  0.  1.     6.509         3    0.  1.  0.  3.  0.     5.044
.........................                 .........................
          ERROR 1                                   ERROR 1
      COOPERATING TEACHERS                        STUDENT TEACHERS

QUESTION NUMBER 17                         QUESTION NUMBER 17
       1   2   3   4   5                          1   2   3   4   5
..........................                 ..........................
1    0.  1.  1.  7.  7.     CHI-           1    0.  8.  6.  2.  1.     CHI-
..........................                 ..........................
2    0.  0.  2.  0.  1.     SQUARE         2    0.  3.  2.  4.  0.     SQUARE
..........................                 ..........................
3    0.  0.  1.  1.  0.      8.531         3    1.  0.  1.  1.  1.     14.199
..........................                 ..........................
         ERROR 1                                    ERROR 1

QUESTION NUMBER 18                         QUESTION NUMBER 18
       1   2   3   4   5                          1   2   3   4   5
..........................                 ..........................
1    1.  1.  0.  5. 10.     CHI-           1    2.  2.  0.  6.  7.     CHI-
..........................                 ..........................
2    0.  0.  2.  1.  0.     SQUARE         2    0.  1.  0.  2.  6.     SQUARE
..........................                 ..........................
3    0.  1.  0.  1.  0.     20.289         3    0.  0.  2.  0.  2.     17.366
..........................                 ..........................
         ERROR 1                                    ERROR 1

QUESTION NUMBER 19                         QUESTION NUMBER 19
       1   2   3   4   5                          1   2   3   4   5
..........................                 ..........................
1    1.  2.  1.  5.  8.     CHI-           1    3.  4.  3.  5.  2.     CHI-
..........................                 ..........................
2    0.  0.  0.  1.  2.     SQUARE         2    0.  0.  2.  1.  6.     SQUARE
..........................                 ..........................
3    0.  1.  0.  0.  1.      3.790         3    0.  0.  1.  2.  1.     13.104
..........................                 ..........................
         ERROR 1                                    ERROR 1

QUESTION NUMBER 20                         QUESTION NUMBER 20
       1   2   3   4   5                          1   2   3   4   5
..........................                 ..........................
1    1.  3.  3.  8.  2.     CHI-           1    4.  5.  6.  2.  0.     CHI-
..........................                 ..........................
2    0.  0.  0.  2.  1.     SQUARE         2    0.  1.  5.  3.  0.     SQUARE
..........................                 ..........................
3    0.  0.  1.  1.  0.      4.204         3    1.  1.  0.  2.  0.      7.928
..........................                 ..........................
         ERROR 1                                    ERROR 1
```

```
   COOPERATING TEACHERS                          STUDENT TEACHERS

QUESTION NUMBER 21                        QUESTION NUMBER 21
        1   2   3   4   5                         1   2   3   4   5
.........................                 .........................
1    1.  1.  4.  6.  5.     CHI-          1    3.  5.  3.  5.  1.     CHI-
.........................                 .........................
2    0.  0.  0.  0.  3.     SQUARE        2    0.  0.  1.  3.  5.     SQUARE
.........................                 .........................
3    0.  0.  1.  1.  0.      7.450        3    0.  2.  1.  0.  1.     13.718
.........................                 .........................
       ERROR 1                                   ERROR 1

QUESTION NUMBER 22                        QUESTION NUMBER 22
        1   2   3   4   5                         1   2   3   4   5
.........................                 .........................
1    3.  2.  2.  0. 10.     CHI-          1    3.  6.  0.  2.  6.     CHI-
.........................                 .........................
2    0.  0.  0.  2.  1.     SQUARE        2    0.  0.  2.  4.  3.     SQUARE
.........................                 .........................
3    0.  0.  1.  1.  0.     15.738        3    0.  2.  0.  2.  0.     15.343
.........................                 .........................
       ERROR 1                                   ERROR 1

QUESTION NUMBER 23                        QUESTION NUMBER 23
        1   2   3   4   5                         1   2   3   4   5
.........................                 .........................
1    1.  5.  4.  5.  2.     CHI-          1    2.  8.  5.  0.  2.     CHI-
.........................                 .........................
2    0.  0.  0.  1.  2.     SQUARE        2    0.  1.  1.  5.  2.     SQUARE
.........................                 .........................
3    0.  1.  0.  0.  1.      7.412        3    0.  1.  0.  2.  1.     15.584
.........................                 .........................
       ERROR 1                                   ERROR 1

QUESTION NUMBER 24                        QUESTION NUMBER 24
        1   2   3   4   5                         1   2   3   4   5
.........................                 .........................
1    1.  0.  2.  7.  7.     CHI-          1    1.  6.  1.  4.  5.     CHI-
.........................                 .........................
2    0.  0.  0.  1.  2.     SQUARE        2    0.  2.  3.  2.  2.     SQUARE
.........................                 .........................
3    0.  0.  1.  1.  0.      4.074        3    0.  1.  0.  2.  1.      6.144
.........................                 .........................
       ERROR 1                                   ERROR 1
```

COOPERATING TEACHERS

```
QUESTION NUMBER 25
      1    2    3    4    5
..........................
1    2.   1.   0.   6.   8.    CHI-
..........................
2    0.   0.   1.   2.   0.    SQUARE
..........................
3    1.   0.   0.   1.   0.    12.030
..........................
           ERROR 1

QUESTION NUMBER 26
      1    2    3    4    5
..........................
1    1.   0.   2.   7.   7.    CHI-
..........................
2    0.   0.   0.   3.   0.    SQUARE
..........................
3    0.   0.   1.   1.   0.     6.509
..........................
           ERROR 1

QUESTION NUMBER 27
      1    2    3    4    5
..........................
1    0.   3.   2.  10.   2.    CHI-
..........................
2    0.   0.   2.   0.   1.    SQUARE
..........................
3    0.   0.   0.   2.   0.     9.130
..........................
           ERROR 1

QUESTION NUMBER 28
      1    2    3    4    5
..........................
1    4.   4.   4.   2.   2.    CHI-
..........................
2    1.   0.   1.   1.   0.    SQUARE
..........................
3    0.   0.   2.   0.   0.     6.558
..........................
           ERROR 1
```

STUDENT TEACHERS

```
QUESTION NUMBER 25
      1    2    3    4    5
..........................
1    1.   3.   5.   3.   5.    CHI-
..........................
2    0.   1.   1.   4.   3.    SQUARE
..........................
3    1.   1.   1.   1.   0.     6.679
..........................
           ERROR 1

QUESTION NUMBER 26
      1    2    3    4    5
..........................
1    2.   3.   7.   4.   1.    CHI-
..........................
2    0.   1.   1.   5.   2.    SQUARE
..........................
3    1.   0.   2.   1.   0.     8.576
..........................
           ERROR 1

QUESTION NUMBER 27
      1    2    3    4    5
..........................
1    1.   3.   2.   6.   5.    CHI-
..........................
2    0.   1.   2.   2.   4.    SQUARE
..........................
3    0.   0.   2.   0.   2.     6.161
..........................
           ERROR 1

QUESTION NUMBER 28
      1    2    3    4    5
..........................
1    2.   4.   5.   2.   4.    CHI-
..........................
2    1.   1.   0.   4.   3.    SQUARE
..........................
3    0.   1.   1.   1.   1.     6.494
..........................
           ERROR 1
```

```
       COOPERATING TEACHERS                         STUDENT TEACHERS

QUESTION NUMBER 29                      QUESTION NUMBER 29
     1    2    3    4    5                   1    2    3    4    5
............................            ............................
1    3.   2.   3.   1.   8.   CHI-      1    6.   0.   4.   2.   5.   CHI-
............................            ............................
2    0.   0.   0.   1.   2.   SQUARE    2    1.   0.   1.   1.   6.   SQUARE
............................            ............................
3    0.   0.   0.   1.   1.    6.091    3    0.   1.   1.   1.   1.   12.337
............................            ............................
          ERROR 1                                 ERROR 1

QUESTION NUMBER 30                      QUESTION NUMBER 30
     1    2    3    4    5                   1    2    3    4    5
............................            ............................
1    2.   0.   1.   4.  10.   CHI-      1    2.   3.   6.   0.   6.   CHI-
............................            ............................
2    0.   0.   0.   1.   2.   SQUARE    2    0.   1.   1.   2.   5.   SQUARE
............................            ............................
3    0.   0.   1.   1.   0.    6.470    3    0.   0.   1.   2.   1.   11.325
............................            ............................
          ERROR 1                                 ERROR 1

QUESTION NUMBER 31                      QUESTION NUMBER 31
     1    2    3    4    5                   1    2    3    4    5
............................            ............................
1    0.   2.   4.   0.  11.   CHI-      1    1.   3.   4.   2.   7.   CHI-
............................            ............................
2    0.   0.   0.   1.   2.   SQUARE    2    0.   1.   1.   3.   4.   SQUARE
............................            ............................
3    0.   0.   1.   1.   0.   10.397    3    0.   0.   2.   1.   1.    5.065
............................            ............................
          ERROR 1                                 ERROR 1

QUESTION NUMBER 32                      QUESTION NUMBER 32
     1    2    3    4    5                   1    2    3    4    5
............................            ............................
1    0.   1.   3.   4.   9.   CHI-      1    2.   7.   1.   5.   2.   CHI-
............................            ............................
2    0.   0.   1.   1.   1.   SQUARE    2    0.   2.   1.   5.   1.   SQUARE
............................            ............................
3    0.   0.   2.   0.   0.    6.614    3    0.   1.   2.   1.   0.    8.766
............................            ............................
          ERROR 1                                 ERROR 1
```

```
      COOPERATING TEACHERS                        STUDENT TEACHERS

QUESTION NUMBER 33                          QUESTION NUMBER 33
      1    2    3    4    5                       1    2    3    4    5
...........................                 ...........................
1     1.   2.   6.   7.   1.    CHI-        1     4.   6.   4.   2.   1.    CHI-
...........................                 ...........................
2     0.   0.   1.   2.   0.    SQUARE      2     0.   2.   4.   1.   2.    SQUARE
...........................                 ...........................
3     0.   1.   1.   0.   0.     4.400      3     1.   0.   2.   1.   0.     7.417
...........................                 ...........................
          ERROR 1                                     ERROR 1

QUESTION NUMBER 34                          QUESTION NUMBER 34
      1    2    3    4    5                       1    2    3    4    5
...........................                 ...........................
1     4.   3.   4.   5.   1.    CHI-        1     7.   6.   2.   1.   1.    CHI-
...........................                 ...........................
2     1.   1.   1.   0.   0.    SQUARE      2     1.   3.   3.   2.   0.    SQUARE
...........................                 ...........................
3     0.   0.   1.   1.   0.     3.379      3     0.   3.   1.   0.   0.     8.868
...........................                 ...........................
          ERROR 1                                     ERROR 1

QUESTION NUMBER 35                          QUESTION NUMBER 35
      1    2    3    4    5                       1    2    3    4    5
...........................                 ...........................
1     0.   3.   3.   7.   4.    CHI-        1     1.   5.   3.   5.   3.    CHI-
...........................                 ...........................
2     0.   0.   2.   0.   1.    SQUARE      2     0.   2.   2.   1.   4.    SQUARE
...........................                 ...........................
3     0.   0.   2.   0.   0.     8.689      3     0.   1.   1.   1.   1.     3.442
...........................                 ...........................
          ERROR 1                                     ERROR 1

QUESTION NUMBER 36                          QUESTION NUMBER 36
      1    2    3    4    5                       1    2    3    4    5
...........................                 ...........................
1     3.   3.   4.   4.   3.    CHI-        1     4.   7.   2.   2.   2.    CHI-
...........................                 ...........................
2     0.   0.   0.   2.   1.    SQUARE      2     0.   1.   2.   4.   2.    SQUARE
...........................                 ...........................
3     0.   1.   0.   0.   1.     7.056      3     0.   2.   0.   1.   1.     9.414
...........................                 ...........................
          ERROR 1                                     ERROR 1
```

```
COOPERATING TEACHERS                       STUDENT TEACHERS

QUESTION NUMBER 37                         QUESTION NUMBER 37
      1    2    3    4    5                      1    2    3    4    5
..........................                 ..........................
1     1.   1.   2.   1.  12.   CHI-        1     0.   5.   5.   3.   4.   CHI-
..........................                 ..........................
2     0.   0.   0.   0.   3.   SQUARE      2     0.   1.   1.   1.   6.   SQUARE
..........................                 ..........................
3     1.   0.   0.   1.   0.   11.000      3     0.   2.   0.   0.   2.    7.246
..........................                 ..........................
          ERROR 1                                    ERROR 1

QUESTION NUMBER 38                         QUESTION NUMBER 38
      1    2    3    4    5                      1    2    3    4    5
..........................                 ..........................
1     1.   1.   1.   2.  12.   CHI-        1     0.   6.   4.   3.   4.   CHI-
..........................                 ..........................
2     0.   0.   0.   2.   1.   SQUARE      2     0.   0.   2.   3.   4.   SQUARE
..........................                 ..........................
3     0.   1.   0.   1.   0.   10.736      3     0.   0.   2.   0.   2.    8.338
..........................                 ..........................
          ERROR 1                                    ERROR 1

QUESTION NUMBER 39                         QUESTION NUMBER 39
      1    2    3    4    5                      1    2    3    4    5
..........................                 ..........................
1     3.   3.   4.   6.   1.   CHI-        1     7.   7.   2.   1.   0.   CHI-
..........................                 ..........................
2     0.   1.   2.   0.   0.   SQUARE      2     3.   1.   4.   1.   0.   SQUARE
..........................                 ..........................
3     0.   0.   0.   2.   0.    7.584      3     1.   2.   0.   0.   1.   13.364
..........................                 ..........................
          ERROR 1                                    ERROR 1

QUESTION NUMBER 40                         QUESTION NUMBER 40
      1    2    3    4    5                      1    2    3    4    5
..........................                 ..........................
1     1.   0.   1.   5.  10.   CHI-        1     0.   2.   6.   3.   6.   CHI-
..........................                 ..........................
2     0.   0.   1.   1.   1.   SQUARE      2     0.   0.   2.   1.   6.   SQUARE
..........................                 ..........................
3     0.   0.   0.   2.   0.    6.500      3     0.   2.   0.   0.   2.    8.928
..........................                 ..........................
          ERROR 1                                    ERROR 1
```

APPENDIX G

LETTER FROM O. J. HARVEY

MARCH 12, 1971

APPENDIX G

University of Colorado
Boulder, Colorado

March 12, 1971

Dr. Burton E. Altman
Wisconsin State University
La Crosse, Wisconsin 54601

Dear Dr. Altman:

. . .

You will note that we used six dimensions for the scoring. The system is self-explanatory, but perhaps a brief word is in order for each of the other five: Openness - our estimate of an individual's receptivity to alien or contradictory beliefs or imputs; richness - multiplicity of themes and overall information conveyed; evaluativeness - implications of good-bad, right-wrong, and other pejorative implications; integration, we would recommend you ignore, because, as it turned out, we could not score this effectively; cynicism - an expression of distrust and a general feeling that nothing is worthwhile or matters. The two readers have reconciled any differences that may have occurred between them on the scoring of systems; however, we elected to let the disagreement on the other dimensions stand as simply differences in our judgments. I would recommend that you sum those and divide by two as your measure of those dimensions.

Sincerely,

O. J. Harvey
Professor

APPENDIX H

LETTER FROM O. J. HARVEY

JUNE 16, 1971

APPENDIX H

UNIVERSITY OF COLORADO
Boulder, Colorado

June 16, 1971

Dr. Burton E. Altman
Department of Education
Wisconsin State University
La Crosse, Wisconsin 54601

Dear Dr. Altman:

Finally, much later than we had hoped, we are returning your TIB's to you. These have been scored by two readers on systems plus 4 other dimensions. As before, the dimensions were on a five-point scale, with 1 representing a small magnitude on the dimension and 5 representing the higher magnitude, irrespective of whether this dimension is considered to be desirable or undesirable. Thus, the higher the score, the greater one is assumed to possess the attribute.

Evaluativeness, about which you inquired in your last letter, represents the extent to which the individual implies good-bad, right-wrong, and the general tendency to use a polarized either/or scaling system for himself. A highly evaluative person would be one who sees a large number of "wrongs" in the world and bothers rarely to mention what's right. Openness, on the other hand, is the assumed extent to which the individual would be tolerant toward or receptive to some idea that runs counter to his own deeply held beliefs. Probably this comes very close to dogmatism as Rokeach has used the term. Low openness would imply high dogmatism or certitude and the implication that the individual had some eternal truth. Low closedness or high openness would imply, conversely, a willingness to examine one's own position and to seriously consider an ideology counter to one's own, although this does not necessarily mean that the respondent would internalize it as his own.

. . .

Sincerely,

O. J. Harvey
Professor

P.S. You will note that the two raters have agreed in each instance in the system of the respondent; however, we do not always agree on the magnitude of the dimensions. As last time, I would suggest you let the average of each dimension represent the subject's score on that particular dimension.